

II-011

FINAL

**SCOTTSDALE MARSH ENHANCEMENT  
AND GATEWAY PLANTING  
AT SCOTTSDALE MARSH  
(NOS. 95-009 AND 93-011)  
Conceptual Enhancement Plan**

November 7, 1996

**Environmental  
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*Sacramento*

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# 1.0 INTRODUCTION

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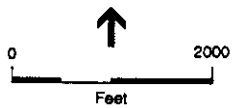
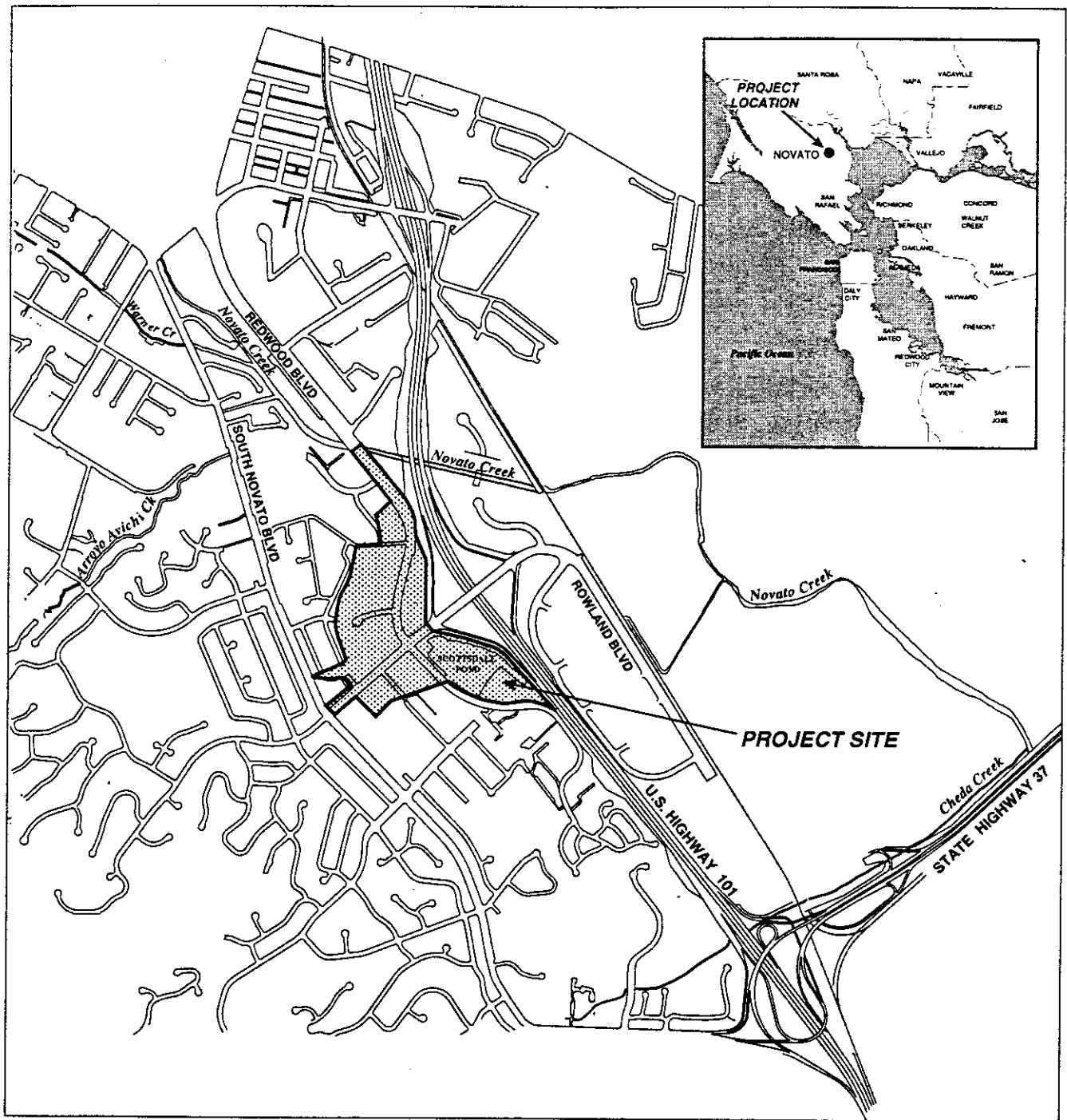
## BACKGROUND AND PURPOSE

This document constitutes the Conceptual Enhancement Plan (CEP) for the Scottsdale Marsh Enhancement and Gateway Planting at Scottsdale Marsh Projects (Project Nos. 95-009 and 93-011). This CEP is the second of three planning and environmental analysis tasks to be performed by Environmental Science Associates (ESA) under contract with the City of Novato Capital Improvement Projects for the Scottsdale Marsh Project Area. Funding for these three tasks was provided by grants from the U. S. Fish and Wildlife Service and by the Transportation Enhancements Activities programs. For the first task, ESA prepared a Baseline Conditions Report, which described the site's existing conditions and general opportunities and constraints. This plan describes the specific planning concepts, objectives, strategies and actions that will be used to develop specific engineering plans and specifications for the marsh enhancement and median planting activities. The final task (Task 3), which will follow, will be an evaluation of environmental impacts associated with this CEP and preparation of the necessary CEQA and NEPA documents.

## PROJECT AREA LOCATION AND DESCRIPTION

The approximately 30-acre project area is located within the City of Novato, California and contains developed and undeveloped components (Figure 1). Roadways and sidewalks comprise most of the developed components. Rowland and Redwood Boulevards bisect the area such that the project area is divided into four sections by the intersection (Figure 2). Traffic medians, ranging in size from approximately 3 to 40 feet in width, occur on both Redwood and Rowland Boulevards. Landscape planting on the median islands is one component of the Scottsdale Marsh projects (Gateway/Median Planting).

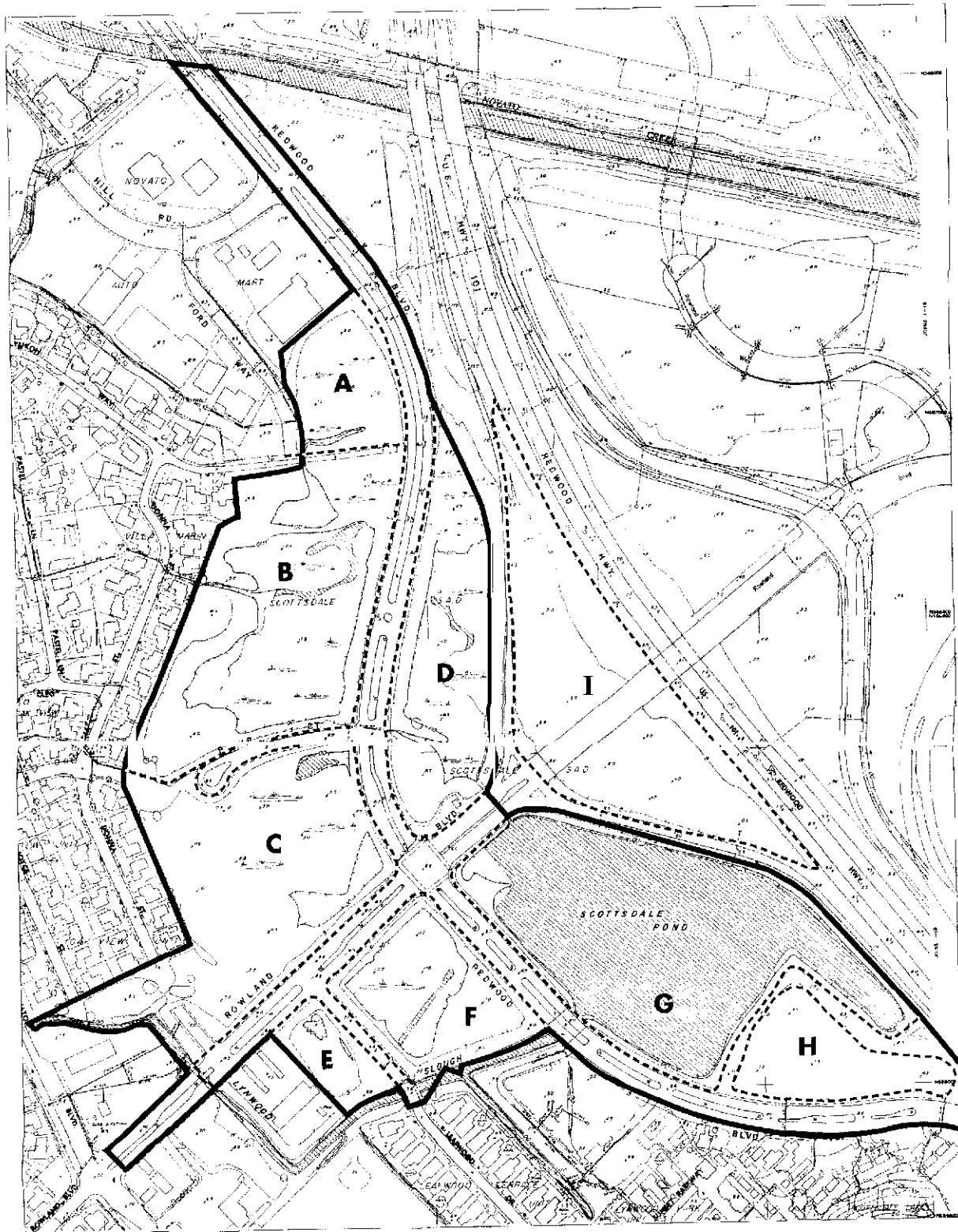
Most of the project area is undeveloped. Undeveloped areas consist of a series of managed and unmanaged marshes and ponds. For purposes of this report, the ponds in the project area have been labeled A through I (Figure 2). The term "Scottsdale Pond" only refers to the open water area southeast of the intersection of Rowland and Redwood Boulevards (Pond G). Enhancement of these ponds and wetlands (Ponds A through H) is the other central component of the projects at Scottsdale Marsh (Marsh Enhancement).



SOURCE: Environmental Science Associates

Scottsdale Marsh Enhancement / 960095 ■

**Figure 1**  
Project Location



— Project Area Boundary  
 - - - Pond Designations

0 400  
 Feet

SOURCE: Environmental Science Associates

Scottsdale Marsh Enhancement / 06/2005 ■

**Figure 2**  
 Ponds in the Scottsdale  
 Marsh Enhancement Area

The project area is largely surrounded by developed uses. US Highway 101 (Highway 101) and its associated on- and off-ramps form the eastern boundary of the project area. The Vintage Oaks Shopping Center is located farther to the east, (i. e., east of the Highway 101 corridor). Land uses on the northern, western and southern boundaries consist primarily of residential development. To the south, condominium units overlook the project area; on the west and northwest, the fences and backyards of single family residences abut the site. Thus, the project area functions as a visual buffer between the Highway 101 corridor and residential areas to the west. Also, Lynwood School and Marin Christian Life Church and School are located to the west of the project area. On the north side of Pond A, along Redwood Boulevard, commercial and light industrial uses are also common.

The project area is characterized as flat and open. Pond bottom elevations range between approximately -1.5 and 2.5 feet mean sea level (msl). Levees and roadways that surround the project area mostly occur at elevations of between 4.5 and 9.0 feet msl.<sup>1</sup> Due to its flat nature, long distance views of the scenic ridgelines surrounding the City to the west, south and north are available from and across the site. Because the site is generally open, it is exposed to sun, wind and noise. The prevailing winds at the site are from the northwest. Due to its proximity to Highway 101 and the prevailing winds the eastern and southern portions of the project area are most affected by freeway noise.

Please see the Baseline Conditions Report for a more detailed description of the site's existing hydrologic, biologic and recreation features.

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<sup>1</sup> This topographic information is based on a June, 1963 photo that has been updated only for improvements/developments in 1991 (City of Novato 1991). Settling may have occurred in some areas, and sedimentation almost certainly has also occurred within the ponds. "Redwood Boulevard, Rowland Boulevard and Leafwood Drive in Novato . . . are known to have experienced extensive settlements since the construction about 10 to 12 years ago" (Soil Foundation Systems 1981). Furthermore, because the twin CMPs under Rowland Boulevard that connect Pond D to Scottsdale Pond have collapsed, additional sedimentation may have occurred behind the culverts in Pond D.



## KEY OPPORTUNITIES AND CONSTRAINTS

The Baseline Conditions Report (ESA 1996) describes the site's physical and land use opportunities and constraints. The site's key opportunities and constraints (i. e., those critical to conceptual plan design) are summarized here:

### Opportunities

- **Habitat/Biology:** The site contains the basic biological components of a natural freshwater marsh and riparian system, therefore, existing vegetation and habitat provide an opportunity for enhancement. The existing emergent wetland vegetation has high habitat value and should be maintained. The four other vegetation / habitat types in the project area - open water, riparian, seasonal wetland and upland - may be enhanced to provide greater diversity and wildlife use.
- **Recreation and Education:** The site is currently used by residents and visitors to the City of Novato for passive recreational uses. Opportunities for enhancement of these recreational uses and further development of interpretive and educational amenities exist in the project area. Two recreational and educational settings exist on site - Scottsdale Pond and the natural marshes.
- **Flood Control:** Reducing barriers to water movement (berms), represent an opportunity to improve water movement across the site (and therefore reduce flooding in adjacent areas) during large flood events. The opportunity to plan for new drainage facilities (e. g., the replacement of culverts) and management of the ponds for flood reduction also exists.

### Constraints

- **Habitat/Biology:** Freshwater inputs limit the type of vegetation and habitat that can be created in the project area.
- **Flood Control:** Existing elevations in the project area are low, therefore excavation to significantly increase flood storage capacity is not possible.

## 2.0 PLAN DEVELOPMENT AND OBJECTIVES

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The process of developing this CEP included identification of objectives, screening of objectives, development of a preliminary CEP, client and public review and report revision (see the discussion of the development process below). The objectives, strategies for achieving those objectives and the specific implementing actions for each strategy are summarized in Table 1.

### PLAN DEVELOPMENT PROCESS

The following steps were taken in developing objectives, strategies and actions for this Conceptual Enhancement Plan:

1. All possible objectives for design and management of the site were compiled (Appendix A). Sources for these objectives included the U. S. Fish and Wildlife Service, the City of Novato Capital Improvements Projects, the City of Novato Department of Parks, Recreation and Community Services, The City of Novato General Plan, Marin County Flood Control, the California Department of Transportation, and consultants to the City of Novato.
2. From this compiled list, design objectives, strategies and actions were identified through a screening process that evaluated the feasibility of achieving the objectives given the site's constraints and the relative cost and benefit of the proposed objectives. Management actions, i. e., those that did not address design of the marsh, were not included at this time. Instead, these actions are described in the management and monitoring sections of each of the plans. The only objective not included at this time for cost and feasibility reasons was the development of an aeration system for Scottsdale Pond.
3. These objectives, strategies and actions were synthesized into a Preliminary Conceptual Enhancement Plan. This Preliminary CEP attempted to reconcile the few potentially conflicting design objectives identified for the site (see the discussion in the following section for more details).
4. The preliminary CEP was presented to the public at a Public Workshop (See Appendix B). Based on public input the design features, in particular the recreation and education components and the design of water features, were modified and incorporated into the CEP described herein. The major design objectives, strategies and actions that emerged from this analysis are presented in Table 1.
5. The Draft Conceptual Plan was presented to the public in a follow-up workshop conducted on September 17, 1996. The Conceptual Plan was revised in accordance with comments expressed by the public and participating agencies (see Appendix B).

Table 1: Primary Objectives, Strategies and Actions for the Scottsdale Marsh Project Area

Objective	Strategy	Action
<b>Improve Flood Control (Objective 1)</b>	Increase storage capacity (Strategy 1.A)	Excavation /a/ (Action 1.A.1)
		Management Ponds as detention basins (Action 1.A.2)
	Increase movement of water during floods (Strategy 1.B)	Reduce obstacles to water movement at Peter Court and Yukon Way. Excavate to 3.0 feet /b/ (Action 1.B.1)
		Plan for new culverts to pass flood flows both within and out of the project area. (Action 1.B.2)
<b>Maintain and enhance biodiversity and wildlife use (Objective 2)</b>	Maintain existing emergent wetlands (Strategy 2.A)	Maintain ponding (i. e., barriers to water flow at Peter Court and Yukon Way) /b/ (Action 2.A.1)
	Enhance riparian vegetation (Strategy 2.B)	Install weir to increase overland water flow (Action 2.B.1)
		Excavate fill area at the Donna Street extension (Action 2.B.2)
		Revegetate with native riparian plants (Action 2.B.3)
	Increase open water habitat (Strategy 2.C)	Excavate ponds in marsh /c/ (Action 2.C.1)
	Enhance upland areas (Strategy 2.D)	Remove exotic species (Action 2.D.1)
		Revegetate with natives (Action 2.D.2)
	Provide protected wildlife areas (Strategy 2.E)	Create protected habitat (islands) (Action 2.E.1)
		Install fencing and plant dense vegetation near heavy use areas to deter intrusion into the marsh (Action 2.E.2)
		Create physical barriers (open water) (Action 2.E.3)
<b>Improve Visual Character (Objective 3)</b>	Screen views of adjacent land uses with vegetation planting /d/ (Strategy 3.A)	Screen views of homes by planting trees and shrubs around Ponds A, B, C, E and F and the Recreation Area (Action 3.A.1)
		Screen views of the Highway by planting trees in medians and adjoining areas (Ponds D and G) (Action 3.A.2)

Table 1: Primary Objectives, Strategies and Actions for the Scottsdale Marsh Project Area (cont.)

Objective	Strategy	Action
<b>Improve Visual Character (cont.)</b>	Screen views and increase visual interest of the site by varying site topography (Strategy 3.B)	Create mounds by placing fill in median islands, on the border of the Recreation Area and at the Peter Court Viewing Platform (Action 3.B.1)
<b>Enhance Recreational Use (Objective 4)</b>	Enhance pedestrian access to and circulation with the site (Strategy 4.A)	Develop earthen trails on the south side of Ponds E and F, on the western edge of Scottsdale Pond (Action 4.A.1)  Extend sidewalk on Redwood Boulevard (Action 4.A.2)  Construct a 6-foot wide bike lane on Redwood Blvd. between Peter Court and Rowland Blvd. (Action 4.A.3)
	Develop a passive recreational use area (Strategy 4.B)	Install turf and picnic facilities at Scottsdale Pond (Action 4.B.1)  Install benches at Scottsdale Pond and Peter Ct.
<b>Increase Educational Use (Objective 5)</b>	Develop an interpretive signage program (Strategy 5.A)	Install signs at Scottsdale Pond and Peter Court viewing area (Action 5.A.1)
	Develop wildlife viewing area (Strategy 5.B)	Construct viewing platform at Peter Court (Action 5.B.1)
<b>Reduce public expenditure for future maintenance of the marsh (Objective 6)</b>	Use low maintenance and City standard materials (Strategy 6.A)	Use low maintenance native plant material in median islands and marsh (Action 6.A.1)  Use City standard site furnishings (Action 6.A.2)

/a/ Few areas exist below 4 feet NGVD, therefore significant increases in flood capacity can not be achieved. See Section 1.0.

/b/ Lowering Peter Court and the Yukon Way extension to 3.0 feet NGVD represents a compromise between achieving greater water movement through the site (by removing flow barriers for flood control) and maintaining ponding (for wetlands) by retaining flow barriers. With this compromise flood waters will not be obstructed above 3.0 feet NGVD and yet 3.0 feet of ponding depth will be available for emergent wetland plants.

/c/ Open water features will also discourage human and domestic pet intrusion into the marsh.

/d/ Planting native vegetation will function to screen views and provide wildlife habitat.

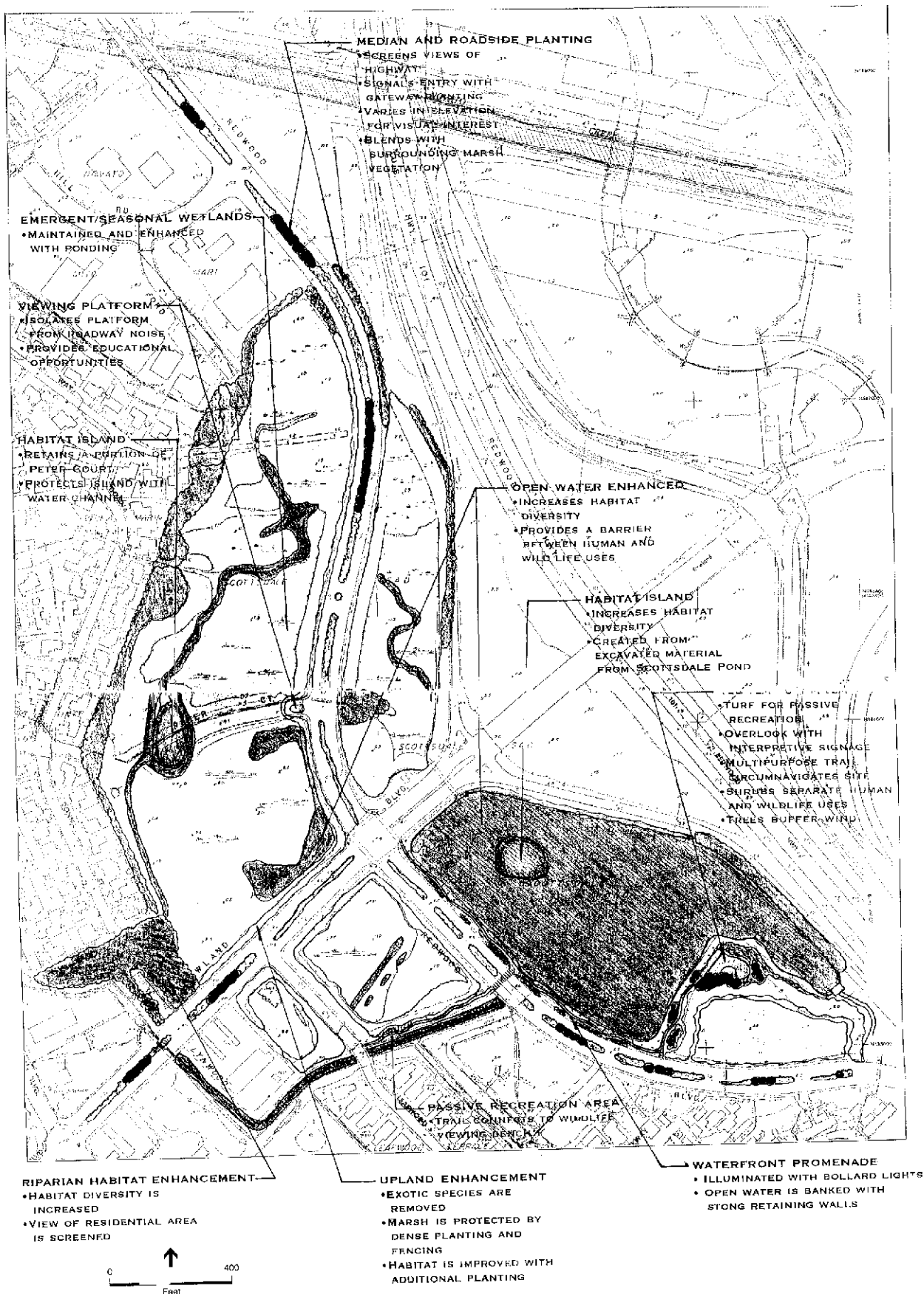
### 3.0 CONCEPTUAL PLAN

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This Conceptual Enhancement Plan incorporates to the highest degree possible all objectives, strategies and actions outlined above in Table 1. Upon implementation of this CEP 1) water movement during high flood flows would be improved, 2) emergent wetland vegetation would be maintained, 3) open water, riparian seasonal wetland and upland habitats would be enhanced and enlarged in area, 4) fencing, vegetation screening and water features would be present to deter human and domestic pet intrusion into the ponds, 5) vegetation and berms would be present to block unsightly views and focus attention on the site's natural aspects, 6) recreational use will be enhanced by the development of a passive recreation and picnic area at Scottsdale Pond and trails in focused areas around the project area, and 7) educational use of the site would be enhanced by the development of two interpretive areas at Peter Court and Scottsdale Pond. See Figure 3 for a graphic depiction of these key components of the Conceptual Enhancement Plan.

In some circumstances, the objectives outlined above could not be achieved entirely and without compromise. As described above, significant additional flood storage capacity can not be achieved in the project area, although some additional capacity will be achieved with the excavation of channels and the lowering of filled areas. The two main areas of design compromise were between 1) flood flow movement and maintenance of emergent wetland vegetation and 2) enhancement of recreation and wildlife uses of the site. The elimination of berms to achieve greater water movement through the site (by removing flow barriers for flood control) and maintaining ponding for wetlands (by retaining flow barriers) tend to conflict. In lowering barriers to 3.0 feet, improved high flood flow (over 3.0 feet) water movement and ponded conditions can both be partially achieved.

The enhancement of recreational uses of the site will increase human use in an area where wildlife uses will also be enhanced. Furthermore, enhancement of habitat will encourage wildlife use and expose wildlife to a human setting. Several measures can be used to separate human and wildlife use including fencing, vegetation planting and screening and deep open water features. The channel feature proposed for the western edge of the site will partly function as a barrier to human and domestic animal intrusion into the marsh habitat. Because the existing emergent vegetation in Pond B is dependent on the existing hydrologic separation of Ponds B and C, the connection of these two ponds via a linear channel must be accompanied by additional water inputs (via a weir in Lynwood Slough) to this area (see Section "Ponds B and C and Peter



Court" of the Conceptual Grading and Flood Improvement Plan for a more detailed discussion). Additional measures (fencing and planting) to reduce potential disturbance to wildlife are also proposed.

This Conceptual Enhancement Plan is organized into 1) a Conceptual Grading and Flood Control Improvement Plan, 2) a Revegetation and Landscaping Plan and 3) a Recreation and Circulation Plan. The Conceptual Grading and Revegetation and Landscaping Plans are separated into Marsh Enhancement and Median /Gateway components. Each of these sections provides descriptions, assumptions and design criteria for each plan, implementation information, and management and monitoring actions.

### 3.1 CONCEPTUAL GRADING AND FLOOD IMPROVEMENT PLAN

Figures 4 through 4F illustrate conceptual grading plans for the Marsh Enhancement and Gateway Planting areas. Existing contours, proposed contours and cut and fill estimates were developed by interpolation of 5-foot contour photogrammetric maps (City of Novato, 1991). Fill and excavation quantities were calculated using a Leitz Digital Planimeter on basemaps scaled to 1":50'.<sup>2</sup> All elevations are expressed in feet NGVD (1929 National Geodetic Vertical Datum). Prior to implementation of these actions, a more detailed grading plan, based on site surveys, will be developed. The main grading actions and objectives achieved by those actions are provided in Table 2 along with estimated cut and fill quantities.

#### Plan Components

##### Marsh Enhancement

##### *Yukon Way Extension*

In order to allow high flood flows to move through the site, i. e., from Pond A to Pond B (Strategy 1.B) and at the same time to retain the hydrologic regime in Pond A that currently supports emergent vegetation (Strategy 2.A), the berm separating Ponds A and B (the Yukon Way Extension) will be excavated to approximately 3.0 feet and slopes will be contoured to

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<sup>2</sup> Because existing one-foot contours were estimated from a 5-foot contour basemap, estimates of cut and fill may not be accurate. Furthermore it is estimated that on average 1.3 feet (or between 0.8 and 2.0 feet) of subsidence has occurred across the site (Adamski 1996). This subsidence is not reflected in the elevations or cut and fill estimates below. Therefore, a minimum 20% margin of error is expected for all cut and fill calculations.

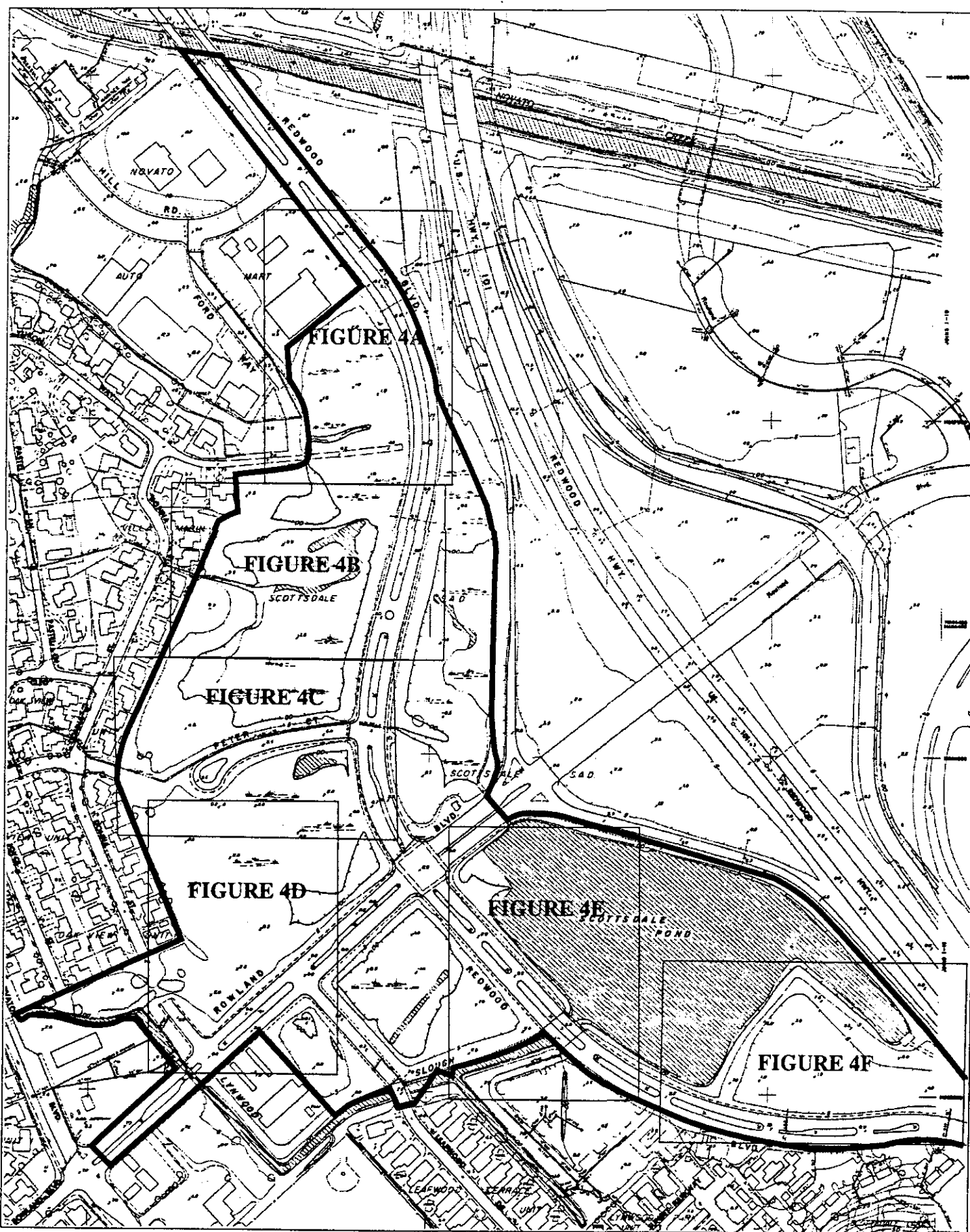
**Table 2: Grading Actions and Estimated Cut and Fill Quantities<sup>3</sup>**

Action	Objectives Achieved	Cut (cu yds)	Fill (cu yds)
<b>Remove obstacles to water movement</b>			
• lower berm between Ponds A and B (Yukon Way)	<b>Flood Control and Biology:</b> facilitate high flood flows while retaining seasonal ponding	400	
• lower Peter Court berm (between Ponds B and C), develop a habitat island with a moat	<b>Flood Control and Biology:</b> facilitate high flood flows, retain ponding, increase habitat diversity, reduce encroachment	10,400	
<b>Excavate ponds</b>			
• Excavate channel in Pond B	<b>Biology:</b> Discourage human encroachment into the marsh and increase habitat diversity	130	
• Excavate moat in Pond C		1,900	
• Excavate a pond in Pond C		160	
• Excavate Scottsdale Pond to -3.0 feet		28,000	
<b>Excavate fill area at Donna Street extension (Pond C)</b>	<b>Riparian:</b> increase habitat diversity	700	
<b>Create habitat island</b>			
• Create habitat island in Scottsdale Pond <sup>4</sup>	<b>Flood Control and Biology:</b> balance cut and fill, maintain flood storage, construct island		2,000
• Excavate pond edge at the intersection of Redwood and Rowland Boulevards <sup>4</sup>		1,200	
• Recontour and excavate portions of the Scottsdale Pond shoreline <sup>4</sup>		1,900	
<b>Create berms in medians, at Peter Court viewing area and in the Recreation Area</b>			
• Median - South	<b>Aesthetics:</b> screen and direct views to away from Highway and residences to marsh		120
• Median - North			600
• Peter Court Viewing Platform			20
• Recreation Area <sup>4</sup>			2,100
<b>Total</b>			

<sup>3</sup> All values over 200 cubic yards are rounded to the nearest 100 cubic yards

<sup>4</sup> All elevations between 2.0 and 9.0 feet NGVD occur in the 100-year flood area, therefore, in order to maintain existing flood capacity all fill above 2.0 feet NGVD is balanced with at least as much excavation from Scottsdale Pond. The cut and fill estimates above also include elevations below 2.0 feet NGVD.





SOURCE: Environmental Science Associates

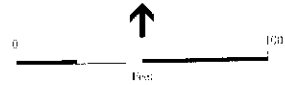
Scottsdale Marsh Enhancement / 960095 ■

**Figure 4**  
Key to Conceptual Grading Plan

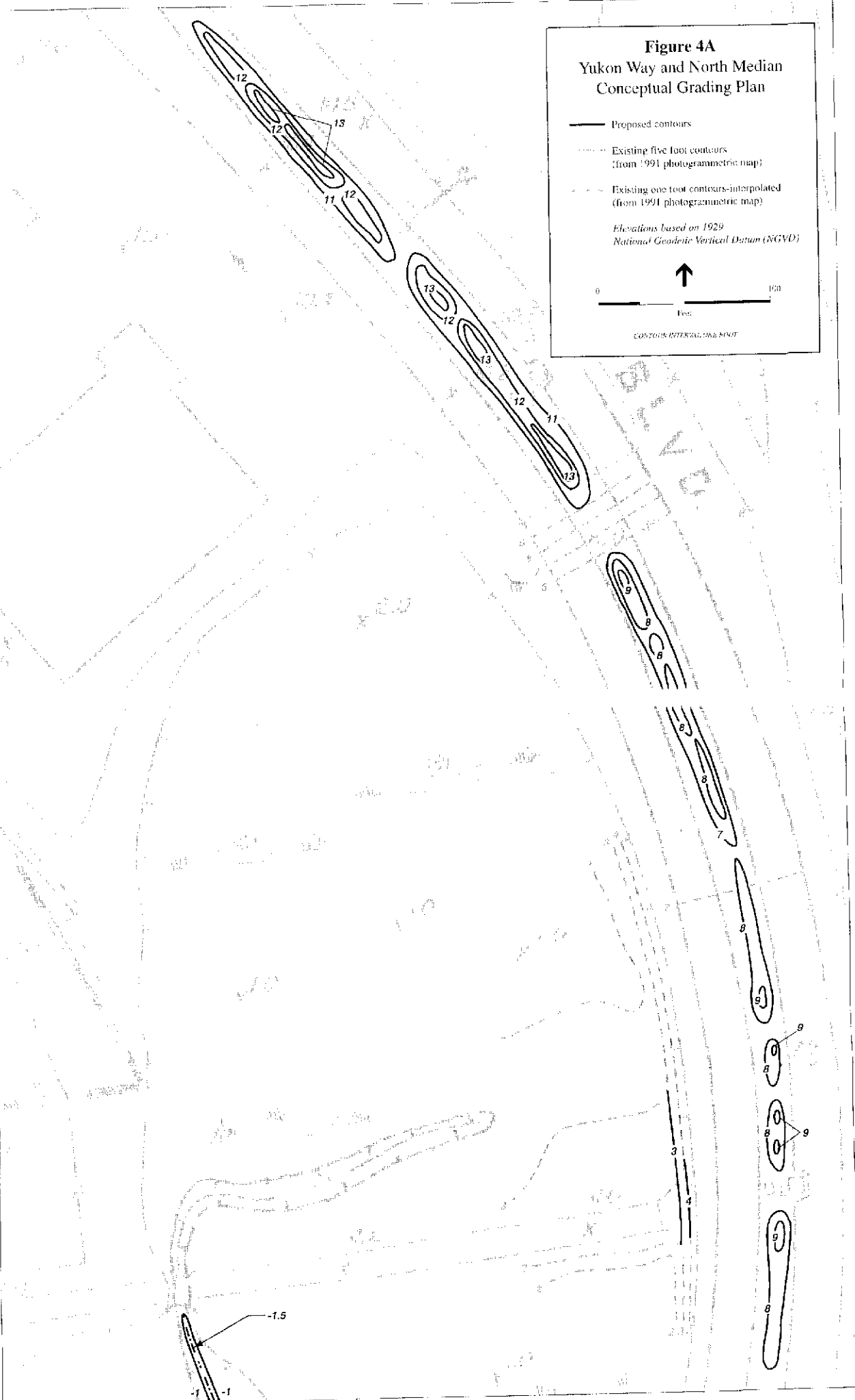
**Figure 4A**  
**Yukon Way and North Median**  
**Conceptual Grading Plan**

- Proposed contours
- - - Existing five foot contours  
 (from 1991 photogrammetric map)
- - - Existing one foot contours-interpolated  
 (from 1991 photogrammetric map)

*Elevations based on 1929  
 National Geodetic Vertical Datum (NGVD)*

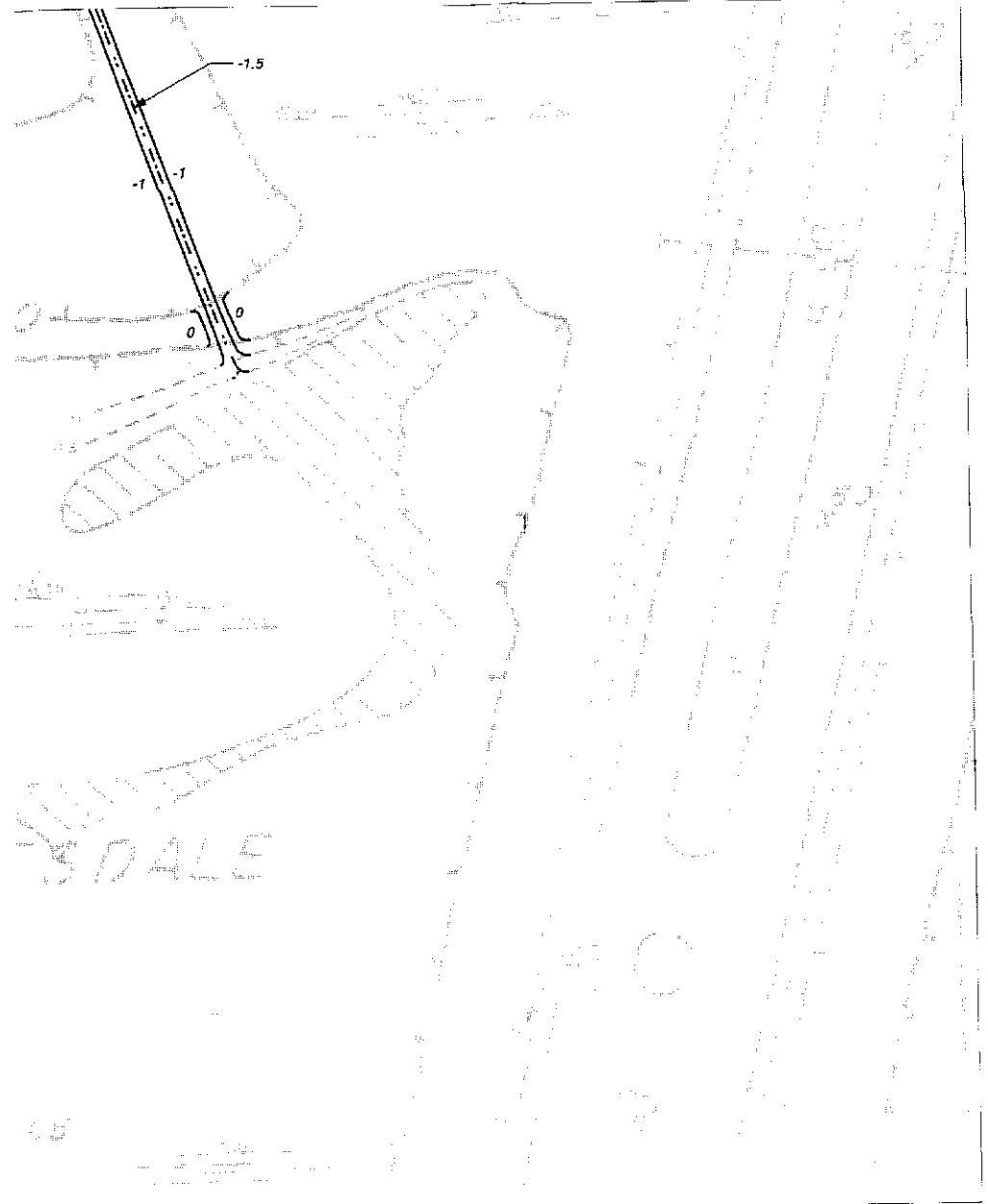
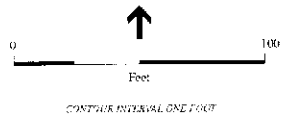


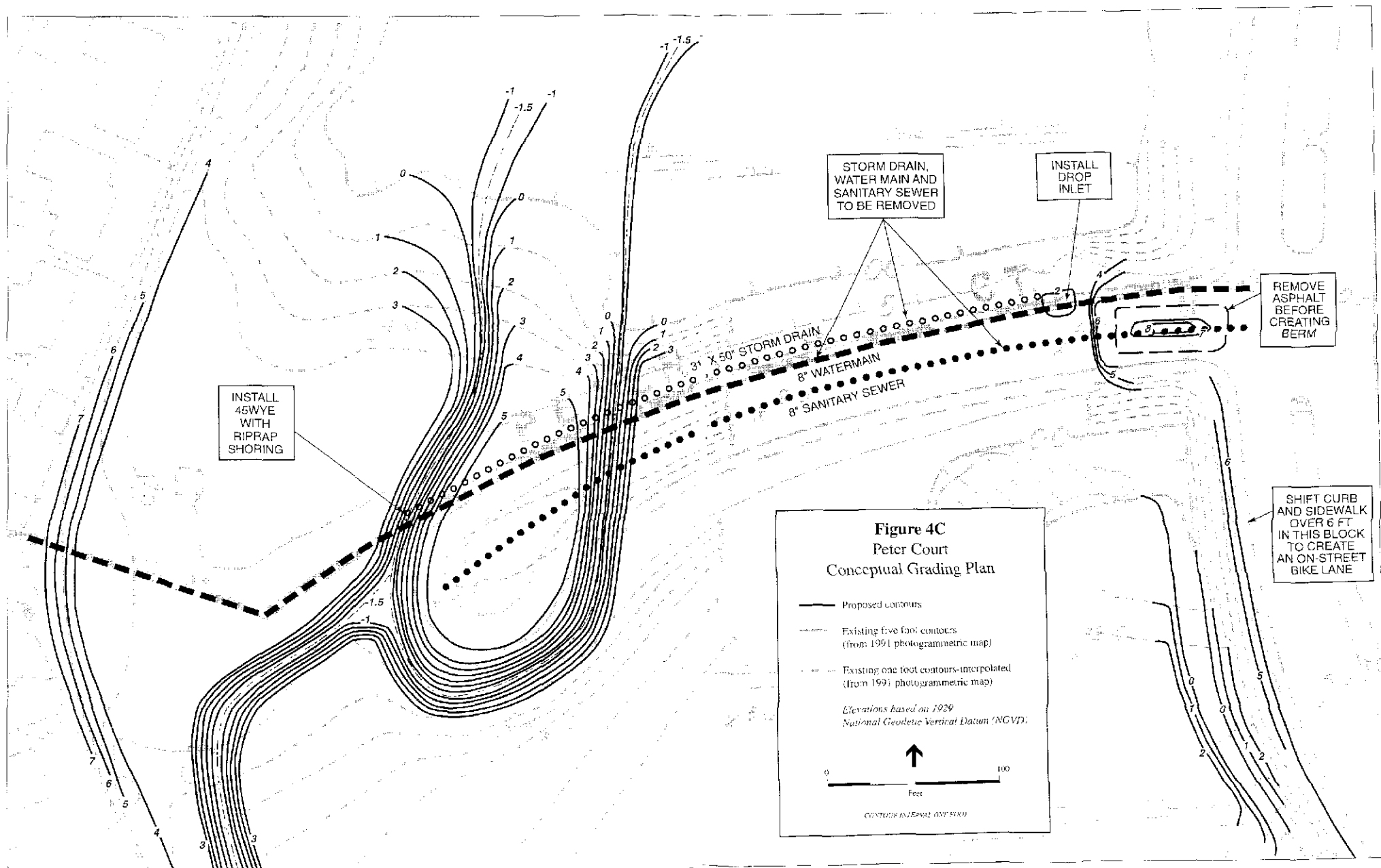
CONTOUR INTERVAL ONE FOOT

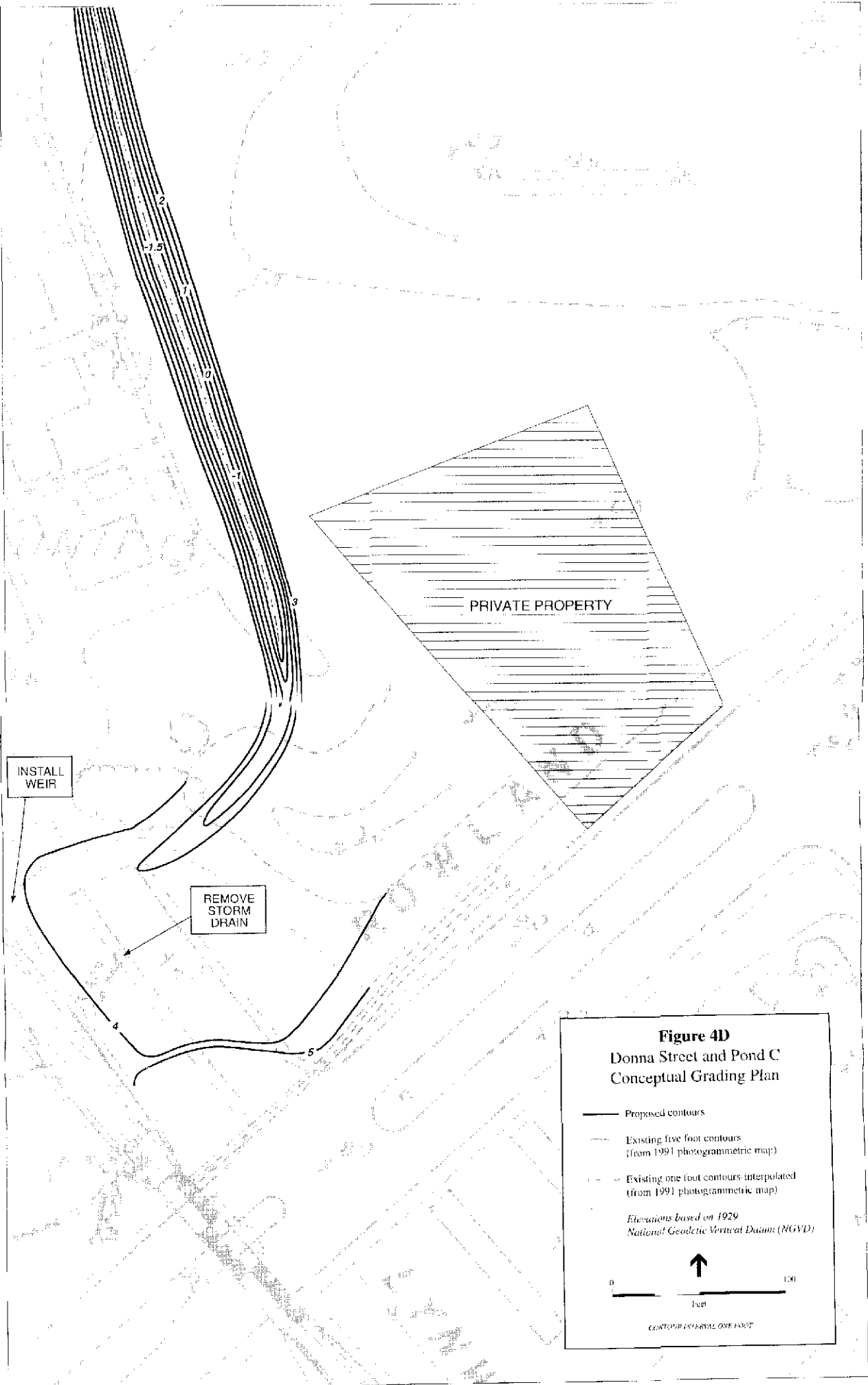


**Figure 4B**  
**Pond B**  
**Conceptual Grading Plan**

- Proposed contours
  - - - Existing five foot contours  
(from 1991 photogrammetric map)
  - - - Existing one foot contours interpolated  
(from 1991 photogrammetric map)
- Elevations based on 1929  
National Geodetic Vertical Datum (NGVD)*







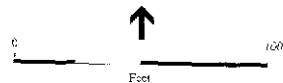
**Figure 4F**  
**Recreation Area and South Median**  
**Conceptual Grading Plan**

— Proposed contours

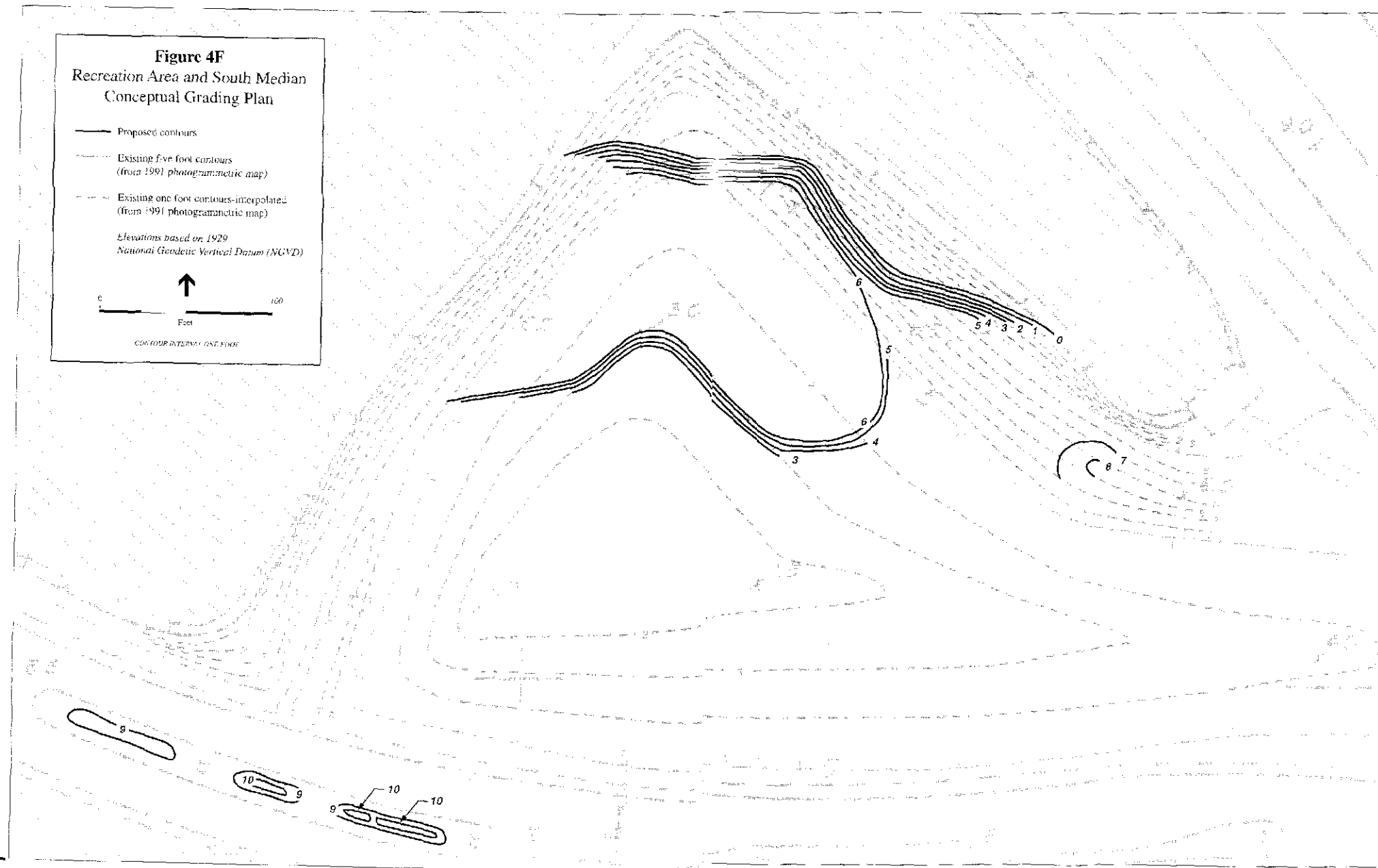
- - - Existing five foot contours  
 (from 1991 photogrammetric map)

- - - Existing one foot contours-interpolated  
 (from 1991 photogrammetric map)

Elevations based on 1929  
 National Geodetic Vertical Datum (NGVD)



ONE FOUR INTERVAL ONE FOOT



match the existing roadway bed (Figure 4A). Excavation would only occur in the area east of the culvert and the culvert would remain intact. After excavation water depth behind the berm will be between 0.0 and 2.0 feet (depending on prior precipitation and the time of year). These depths are consistent with the hydrologic requirements of waterfowl plants that exist in this area (Hammer 1992, Grace 1989).

The lowering of the berm between Ponds A and B will affect pond conditions in those years in which pond elevations would have risen to between the top of the proposed berm and the present berm elevation - or between, 3 and 4 feet.<sup>5</sup> In the years that would previously have filled, but now will overtop the berm, Pond A would probably have retained water somewhat longer into the spring. In other words, by lowering the elevation of the berm, the quantity of water retained behind the berm would be reduced (in years when the water elevations were between 3.0 and 4.0 feet). Generally, reducing the quantity of water behind the berm would reduce the duration of ponding into the spring. However, because the lowering of the berm is minor (one foot) and will only affect ponding in some areas and because there is a culvert draining this pond, any decrease in ponding duration would likely be minor.<sup>6</sup>

Marin County Flood Control has plans to "daylight" the culvert that connects Baccaglio Basin to Pond A (Lewis 1996). This action will have little effect on the enhancement except it will increase potential riparian habitat in the area and possibly result in slight reductions in winter flows to Pond A due to infiltration.

#### *Ponds B and C and Peter Court*

The hydrologic regimes and elevations in Ponds B and C differ. Currently, Pond C is fed by direct precipitation and by large storms (i. e., infrequent overflow from Pond B and Lynwood Slough), while Pond B is fed by direct precipitation, outflow and overflow from Pond A and direct storm drain inputs. Direct and indirect storm drain inputs to Pond B probably contribute to relatively higher water volume inflows to Pond B than in Pond C. In general, inflow to Pond B stays within Pond B (except to the extent it drains through the culvert to Pond D) and inflow to Pond C generally stays within Pond C, so these two ponds are hydrologically disconnected. Bottom elevations in Pond C are generally higher than those in Pond B. These hydrologic and elevation features combined produce emergent wetland in Pond B and a mix of seasonal and

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<sup>5</sup> The frequency of this event could be every other year or once every few years. Detailed frequency information is not available.

<sup>6</sup> The culvert will be retained to maintain water movement and as an anti-mosquito measure.

emergent wetland in Pond C.

These distinct hydrologic conditions partially constrain the enhancement design for the area. In order to be effective in discouraging human and domestic animal intrusion into the marsh (Strategy 2.E), a barrier pond should be constructed along the western edge of Ponds B and C. Excavation of such a pond would hydrologically connect Ponds B and C. Under current hydrologic conditions, if a pond was excavated across the Peter Court berm and Ponds B and C were connected, then the water that currently ponds in Pond B (and creates an emergent wetland) would drain into Pond C, as well as spread over a much larger area (i. e., both Pond B and Pond C). This action would likely change the hydrology of Pond B and could degrade the existing emergent vegetation in this area (conflicts with Strategy 2.A).<sup>7</sup> Therefore the persistence of the diverse emergent wetland behind the Peter Court berm (and the hydrologic regime that created it) depends on additional flows to be introduced into Ponds B and C from Lynwood Slough. Installation of a weir at Lynwood Slough would allow greater and more frequent inflow to Pond C. With greater amount of water entering this area, the effect of lowered water levels (as a result of pond connection) in Pond B would be offset. Operation of the weir to achieve a balance between flood protection and habitat goals will require some study (see discussion under Management and Monitoring, below).

The ponds in this area have been designed to discourage access to the marsh and to take advantage of the site's existing topography. Proposed channels are located in areas that are low in elevation and in most cases are designed to follow natural or historic slough meanders. Bottom elevations for channels should be approximately -1.5 feet, which is within the range of reported groundwater elevations in the project area, between 0.0 to -3.0 feet (Converse Consultants 1985). Excavation to groundwater will help ensure that water will pond in the channels at least into the late spring or early summer. Although in some years channels may be dry in the summer months, thereby reducing habitat and protective values, open water is expected to be present during all or most of the peak waterfowl and shorebird migration and nesting periods (i. e., October to May). The side slopes of channels and moats will be relatively steep in order to discourage human encroachment to the marsh and the habitat island. The moat on the western edge of Ponds B and C will have an approximately 1.5:1 slope condition. The slopes of other channels in Ponds B and C will be between 1.5:1 and 4:1. The excavated open water feature near Redwood Boulevard would be excavated to 0.0 feet with 5:1 slopes.

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<sup>7</sup> Peter Court culvert inflow would probably offset this lowering in water surface only slightly.



Most of the rest of the Peter Court area (excluding the slough described above) will be excavated to 3.0 feet, except where higher elevations will be retained for the habitat island and viewing platform (see Figure 4C). Excavation to 3.0 feet will provide greater elevational, and therefore habitat diversity. Maximum elevation of the habitat island will be 5.0 feet. Areas above 4.0 feet are not expected to experience prolonged inundation, therefore, the habitat island would function as a relatively permanent upland refuge, loafing and nesting habitat. Slopes separating the habitat island from the moat will be steep, to discourage encroachment from the retained berm across Peter Court. Where the island connects to Pond B to the north, slopes will be much more gradual, no greater than 6:1. The viewing platform will be maintained at the existing grade (approximately 6.0 feet). Asphalt in the middle of the proposed viewing platform area will be removed and a two foot high berm will be created for planting. Slopes off the platforms into the marsh will be steep (1.5:1) and fencing will be installed on these slopes in order to discourage human and pet encroachment.

Three utility lines exist across Peter Court - storm water, sanitary sewer and a water main. All of these pipes will be removed and plugged (Figure 4C). Most of the 31" x 50" storm drain under Peter Court would be removed (see Figure 4C). On the west, the storm drain would be cut where it intersects the linear slough. At this point, the invert would occur at approximately 1.8 feet. Installation of a 45 wye joint and surrounding riprap would be required to direct storm flows from this culvert into Pond B and protect the sides of the slough from excessive erosion. As the pipe removal and installation will require excavation below the final grade, backfill soils will be temporarily stockpiled on the viewing platform area or at the end of Adele Street. Below the viewing platform and Redwood Boulevard, the storm drain would be retained to allow for exit of high flood flows into Pond D. A drop inlet would be installed at this location to connect proposed grade (2.0 feet) with the elevation of the retained storm drain culvert (1.2 feet). The sanitary sewer line which occurs between -1.0 and 4.0 feet would be removed and plugged. Also the watermain located at approximately 6.0 feet (or under 3 feet of cover according to the North Marin Water District, 1996) will be removed.

#### *Donna Street Extension*

In order to expand the riparian area at Donna Street, elevations will be lowered and overland water flow will be increased. Donna Street extension would be excavated to 4.0 feet (Figure 4D). Slopes will be graded to match the existing grade around the pond (approximately 4:1 slopes). The existing storm drain (18" RCP) to Lynwood Slough from the Donna Street extension would also be removed. A portion of the Donna Street extension (approximately 50

feet adjacent to Rowland Boulevard) will be retained as plans exist to build a second entrance to the adjacent Shopping Center via Donna Street and a bridge over Lynwood Slough. Total removal, partial removal and non-removal of the Donna Street extension were all options considered as part of this CEP. Partial removal was identified as the alternative that best met future planning and habitat enhancement objectives.

To increase overland flow, a slotted weir will be installed into the bank of Lynwood Slough. The weir will be constructed using rock or faced with rock in order to blend in with the adjacent natural features. The vertical slot will extend from the channel bank (approximately 5.0 feet) to 3.0 foot and be adjustable (i. e., be constructed with slide gate or flash boards). A rock apron will be installed behind the weir to direct water to a linear pond in Pond C.

#### *Scottsdale Pond*

A second habitat island will be developed in Scottsdale Pond to enhance existing waterfowl use and habitat. In order to create a habitat island and not reduce the storage capacity of Scottsdale Pond, all fill for the habitat island will come from excavated materials in the pond. Three sources of fill material exist in Scottsdale Pond - the pond edge at the corner of Redwood and Rowland Boulevards, excavated material from the bottom of Scottsdale Pond and the pond edge around the proposed recreation area (Figures 4E and 4F). In order to reduce mosquito breeding habitat and the density of cattails in Scottsdale Pond, the pond bottom will be dredged to a depth of -3.0 feet NGVD with sides that match the existing slopes (approximately 2:1). Because the material from the pond bottom will be saturated and composed of silts and clays, the soils will need to be stockpiled and dried prior to construction of the habitat island. Soils will be stockpiled within the footprint of the proposed recreation area in order to minimize impacts to adjacent wetlands. The proposed habitat island will be constructed to a height of 4.0 feet (approximately 7.0 feet high from the proposed pond bottom). Slopes around the side of the island should be gradual and will not exceed 6:1 (see Figure 4E).

The location and size (length and width of the habitat island may be adjusted for ease of construction; however, the following design criteria must be met:

- The quantity of fill to be placed between 2.0 and 9.0 feet elevation for the construction of the island and the Recreation Area may not exceed that removed from these elevations (i. e., from the Recreation Area and the pond edge at the intersection). Although excavation of all materials near the intersection may not be required for the construction of the habitat island (and it is not designed as such in this report), excavation of this area is encouraged as it will

serve to provide some increased flood storage capacity, especially at initial flood events and to discourage waterfowl feeding and human access to the water's edge. Excavated material that is not used for the habitat island may be used as fill in other areas or disposed off site (see the discussion below under Soils Testing and Disposal).

- The island must be located no closer than 100 feet from Redwood and Rowland Boulevards and from the Recreation Area.
- The island must comprise a minimum of 5% of the overall area of Scottsdale Pond.
- The slope conditions must not exceed 6:1.

The CMPs under Rowland Boulevard that direct flows from Pond D to Scottsdale Pond have collapsed (Adamski 1996). Replacement pipes of similar size and invert should be installed. If the size and invert of the pipes is modified (e. g., the capacity is increased), then the ponding regime behind those pipes may be altered and the vegetation community compromised.

#### *Recreation Area*

The proposed recreation area will be recontoured and filled to improve the aesthetics of the area and provide turf area for picnic and passive recreation uses. The aesthetics of the site would be improved by reshaping the straight engineered shoreline into an undulating edge. Portions of the shoreline around the proposed recreation area will be reshaped and excavated to improve the aesthetic nature of the site and to provide additional fill for the habitat island described above (Figure 4F). The shoreline of the recreation area will be surrounded by a stone retaining wall intended to improve the aesthetic nature of the pond. The final grade for the recreation area will be 6.0 feet. Fill for this area could come from acceptable on-site soils (see Soils Testing and Disposal below). Standard landscaping compaction will be used.

#### *Median / Gateway Planting*

Elevations in portions of the median islands on Redwood Boulevard would be raised by 1 to 3 feet (see Figures 4A and 4F). The purpose of these berms or knolls is to guide views and create visual interest, through variable elevations, for the passersby. Berms will be located only in the middle of median islands so that views near turning areas and intersections from automobiles are not obstructed. Vegetation will be planted on, in and among these berm or mounds (see below). Berms will not exceed 3:1 slope condition. Standard landscaping compaction will be used.

## Implementation

### Purchase of remaining private property

The City should attempt to acquire the last remaining privately held parcel in the project area and integrate it into the restoration planning for the site (Figure 4D).

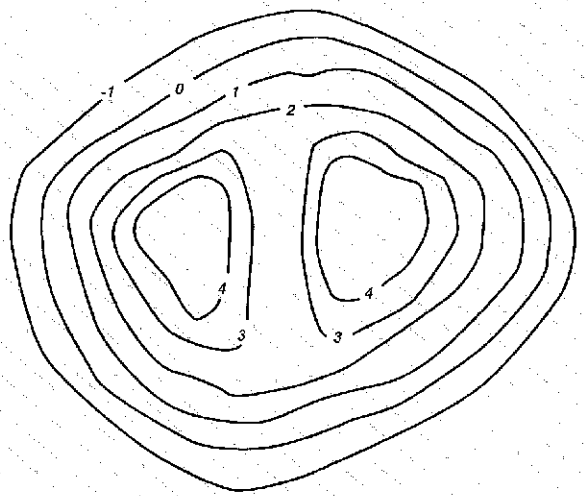
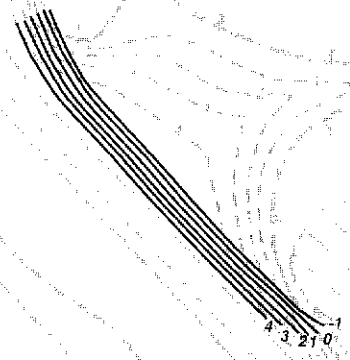
### Soils Testing and Disposal

Excavated materials from the project area may be used for on-site fill (e. g., for the recreation area or the median islands) or disposed of off-site. Soils should be tested (for agricultural suitability including the presence/absence of elements essential for plant growth and for salinity, pH, texture and heavy metals) to determine whether these soils are acceptable as planting substrate and whether significant water quality problems exist in the marsh. A total of eight sample sites (composed of three separate sample bores) will be tested (see Figure 4G). Bores will be taken to a depth of six inches at all sites. If soils do not contain hazardous materials or heavy metals, they can be used as fill. Excavated materials from Peter Court and the Yukon Way extension may be acceptable for the landscaping (be spread on top of fill), while soils from the marsh likely contain too much clay and would not be appropriate for landscape planting. In most cases, on-site soils will likely need to be amended in areas slated for planting. The soil test will recommend amendments for each soil type in quantity and application. If soils are not appropriate for landscaping or fill, clean fill will be imported. All clean excavated soils not used on-site will be used to shore levees along Novato Creek (at the end of Rowland Way, north of Vintage Oaks). Asphalt and concrete would be hauled to a nearby landfill.

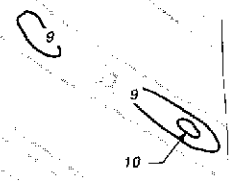
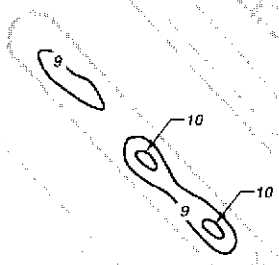
If sediment tests in Ponds B and C indicate high concentrations of heavy metals, oil or grease, the City should consider additional water quality control measures upstream (see the discussion of water quality below).

## Management and Monitoring

Management of the site's physical features will be minimal. Some sedimentation and erosion is likely to occur in the marsh and therefore additional routine excavation of slough channels or ponds (perhaps every five to ten years) may be required. The City should monitor sedimentation in the ponds and sloughs. If ponds begin to fill and do are no longer functioning as open water features the ponds should be re-excavated. The Marin County Mosquito and Vector Control



DREDGE POND  
BOTTOM TO 3.0 FEET NGVD.  
MATCH NEW SLOPE TO  
EXISTING (APPROXIMATELY 2:1)



**Figure 4E**  
**Scottsdale Pond**  
**Conceptual Grading Plan**

— Proposed contours  
--- Existing five foot contours (from 1991 photogrammetric map)  
--- Existing one foot contours-interpolated (from 1991 photogrammetric map)

*Elevations based on 1929  
National Geodetic Vertical Datum (NGVD)*

0      ↑      100  
Feet

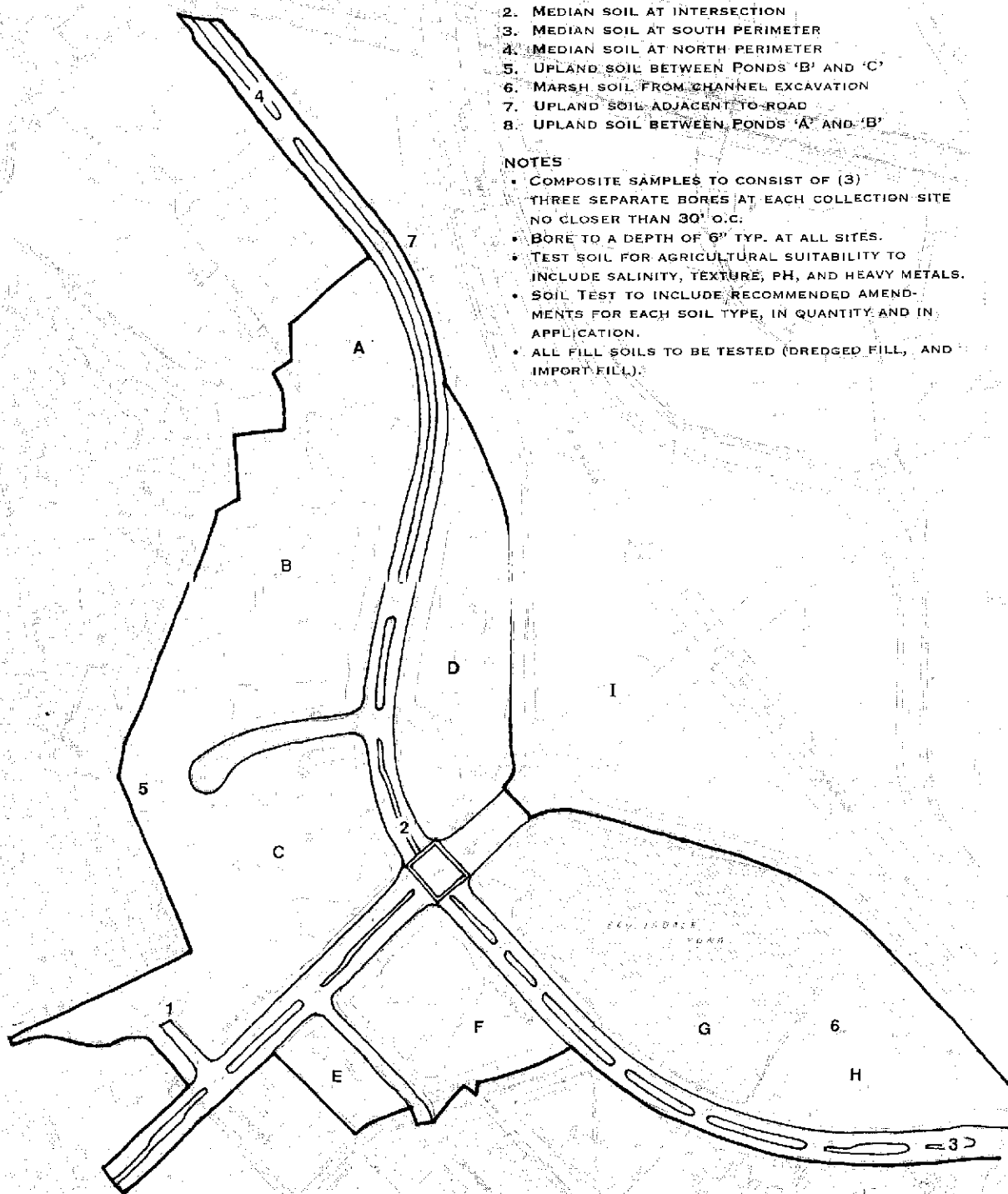
CONTOUR INTERVAL ONE FOOT

# KEY

1. RIPARIAN ZONE NEAR POND 'C'
2. MEDIAN SOIL AT INTERSECTION
3. MEDIAN SOIL AT SOUTH PERIMETER
4. MEDIAN SOIL AT NORTH PERIMETER
5. UPLAND SOIL BETWEEN PONDS 'B' AND 'C'
6. MARSH SOIL FROM CHANNEL EXCAVATION
7. UPLAND SOIL ADJACENT TO ROAD
8. UPLAND SOIL BETWEEN PONDS 'A' AND 'B'

## NOTES

- COMPOSITE SAMPLES TO CONSIST OF (3)
- THREE SEPARATE BORES AT EACH COLLECTION SITE NO CLOSER THAN 30' O.C.
- BORE TO A DEPTH OF 6" TYP. AT ALL SITES.
- TEST SOIL FOR AGRICULTURAL SUITABILITY TO INCLUDE SALINITY, TEXTURE, PH, AND HEAVY METALS.
- SOIL TEST TO INCLUDE RECOMMENDED AMENDMENTS FOR EACH SOIL TYPE, IN QUANTITY AND IN APPLICATION.
- ALL FILL SOILS TO BE TESTED (DREDGED FILL, AND IMPORT FILL).



District has an interest in maintaining, to the extent possible, permanent deep water features (to -1.5 feet) in order to provide habitat for mosquitofish and to minimize mosquito populations and therefore may be willing to devote equipment and personnel to maintain channels and ponds in the project area (Dill 1996).

The slotted weir at Lynwood Slough will require management and maintenance effort. The weir will need to be maintained in working order and will require inspection twice a year to ensure that it is working properly. Proper operation of the weir to achieve the desired objectives will require management and monitoring of sill elevation and water levels in Pond C. The frequency and magnitude of overland flows into Pond C will need to balance ecological requirements and flood risk, which will vary with annual rainfall patterns. To the extent that water is allowed to pond in Pond C, flood storage capacity is decreased and flood risk is potentially increased, especially if water levels are high prior to a large flood event. Therefore overflow from Lynwood Slough may be most appropriate beginning in later April through late May after which large flood events typically do not occur. A two-year trial program will be implemented to determine appropriate management of the weir.

Trash and debris that has been dumped in to ponds will be removed and will City will monitor trash dumping in the ponds on an annual basis in the future. The City will also annual check (and clear of debris) the culverts within the project area each fall prior to the first rains.

A water quality test will be conducted for water flowing into Ponds A, B and C and in Scottsdale Pond. Based on the findings of the survey, the City may want to further restrict access to the Pond for fishing and waterfowl feeding. If the sediment or water quality tests indicate unacceptable concentrations of metals or oil or grease, water quality improvement measures should be installed at storm drain inlets within the watershed to improve the quality of water entering the marsh system<sup>8</sup>. Such filtration and settling systems may include oil and gas separators, compost based systems or hydraulic systems (e. g., Vortech). Periodic tests (approximately every five years) should also be performed in order to monitor further changes to water quality. All of these systems would require additional maintenance efforts by the City. A dog waste control program also should be implemented and could include provision of plastic bags and trash cans. The City may also want to consider the future installation of an aeration system in Scottsdale Pond to increase oxygen levels and reduce the incidence of fish kills.

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<sup>8</sup> The City is in the process of implementing components of its NPDES permit. Therefore, measures described above would be implemented in addition to the practices and systems described in the permit.

### 3.2 REVEGETATION AND LANDSCAPING PLAN

The Revegetation and Landscaping Plan describes, location and species composition for proposed plant communities to be enhanced and methods and criteria for soil testing and preparation, exotic species removal and plant installation. The reader is referred to Appendix C for planting lists and a description of installation methods.

#### Plan Components

Revegetation of the uplands and wetlands in the project area will serve three functions 1) to increase native habitat, 2) screen views and 3) in coordination with opaque fencing and physical features, to buffer human uses from wildlife uses. As one of the primary objectives of the CEP is to improve wildlife habitat, only native vegetation (native to Novato and to wetland habitat) will be planted in the marsh (Figures 5, 5A and 5B and Appendix C). A mix of native and non-invasive non-native species will be used in the medians (Figure 6). In areas where no revegetation is proposed, natural regeneration is expected to occur. These areas include primarily the emergent wetland and open water areas.

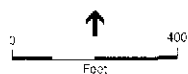
The following objectives and actions from Table 1 are achieved in this plan:







- Enhance riparian and seasonal wetland vegetation through revegetation with natives (Strategy 2.B)
- Enhance uplands by removing exotic species and revegetating with natives (Strategy 2.C)
- Improve the visual quality of the site by screening views of adjacent land uses (i. e., homes and highway) with vegetation and by planting medians with marsh like species (Objective 3)
- Increase wildlife protection by planting buffer and screening vegetation (Strategy 2.E)

#### Marsh Enhancement

Proposed plant communities for the Marsh Enhancement include riparian wetland, seasonal wetland and upland transitional. Emergent wetland communities will be maintained by maintaining the existing hydrologic regime, but not enhanced by planting. Eight inch offsets (in which no tree or large shrubs will be planted) will be maintained around watermain and the aqueduct in the marsh area (see Figure 5).





-  RIIPIAN WETLAND (R1 - R3)
-  EMERGENT SEASONAL WETLAND
-  UPLAND WETLAND TRANSITIONAL (U5 - U7)
-  TURP
-  SLOTTED WEIR
-  MAINTAIN AN 8 INCH OFFSET ZONE IN WHICH NO PLANTING WILL OCCUR (AROUND WATERMAINS AND AQUADUCT)

SOURCE: Environmental Science Associates

Scottsdale Marsh Enhancement at 1/30/09

**Figure 5**  
Revegetation and Landscape Planting  
Marsh Enhancement

**TREES:**

AC AESCULUS CALIFORNICUS  
AR ALNUS RHOMBIFOLIA  
QL QUERCUS LOBATA

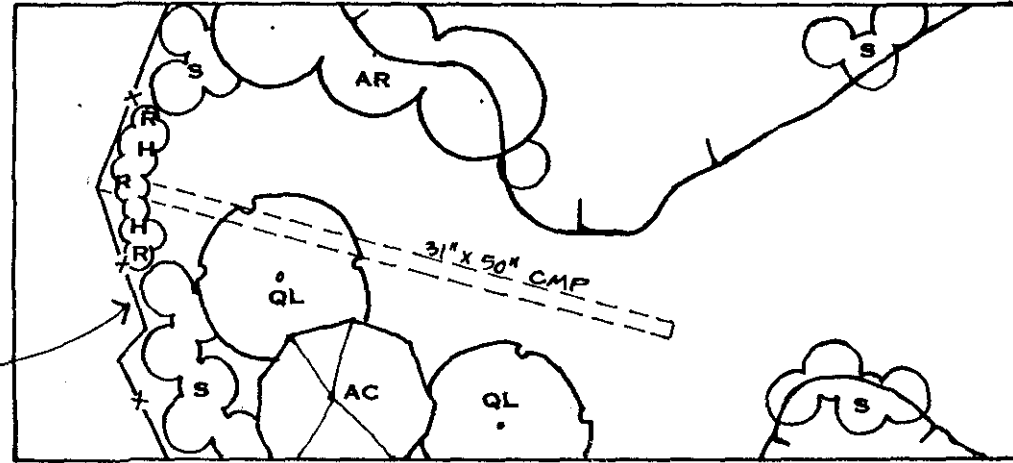
BUCKEYE  
WHITE ALDER  
VALLEY OAK

**SHRUBS:**

S SALIX LUTEA, S. LAEVIGATA  
H HETEROMELES ARBUTIFOLIA  
R RHAMNUS CALIFORNICUS

YLW, RED WILLOW  
TOYON  
COFFEEBERRY

FENCE:  
USE SHRUBS  
TO SCREEN



UPLAND / RIPARIAN HABITAT (PETER COURT)

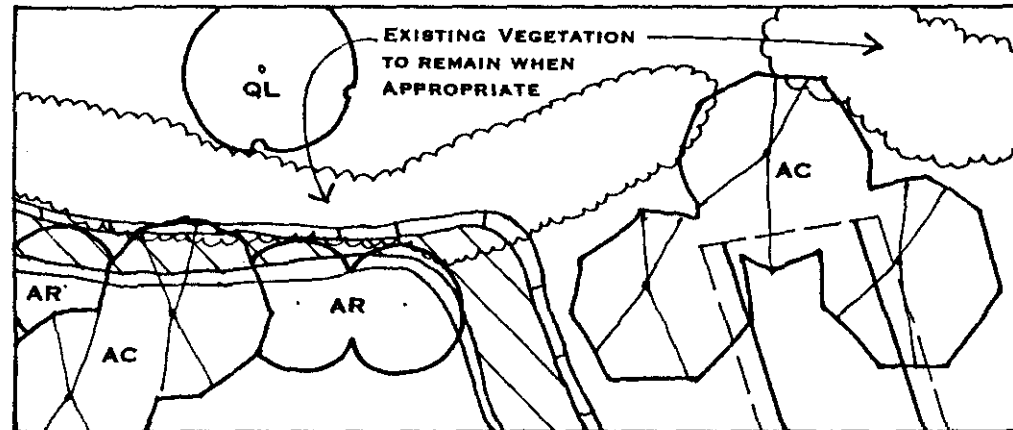
**TREES:**

AC AESCULUS CALIFORNICUS  
AR ALNUS RHOMBIFOLIA  
QL QUERCUS LOBATA

BUCKEYE  
WHITE ALDER  
VALLEY OAK

**SHRUBS:**

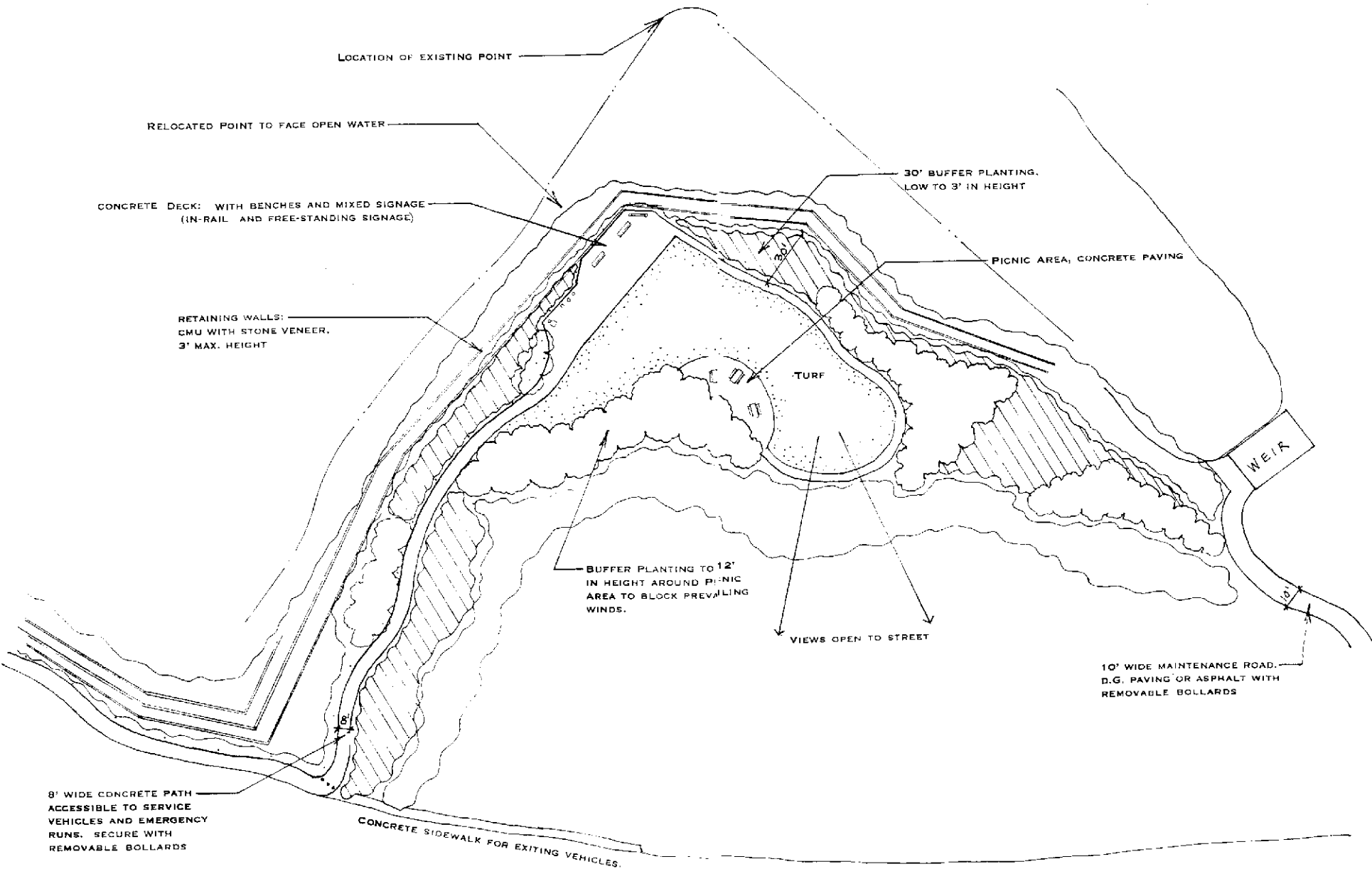
NO NEW SHRUBS



RIPARIAN HABITAT (DONNA STREET)

**PLANTING VIGNETTES - MARSH ENHANCEMENT**

1" = 50'-0"



PLAN OF SCOTTSDALE POND IMPROVEMENTS

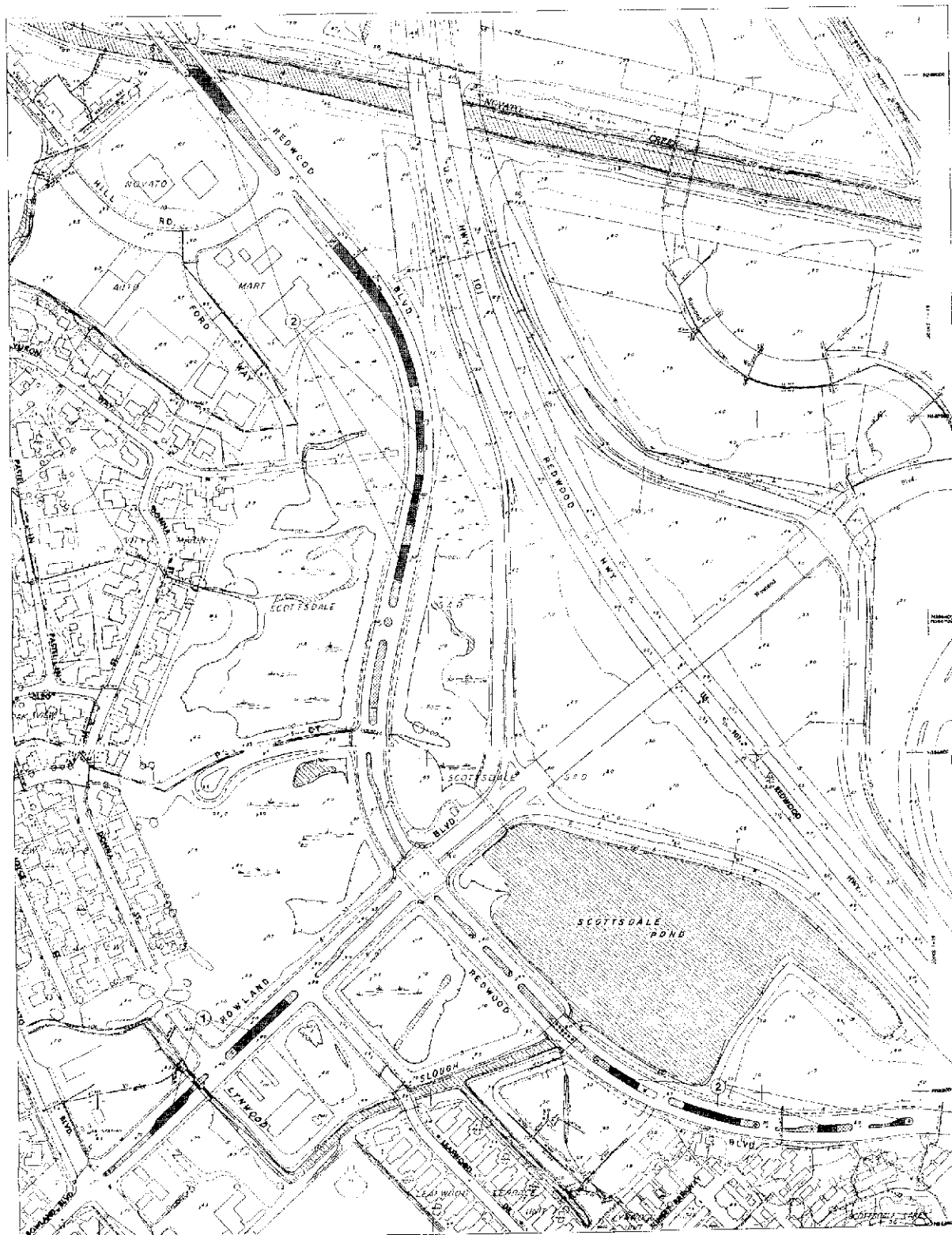
1" = 50'-0"





SOURCE: Studio Green

Scottsdale Marsh Environment / 9/9/05 ■

Figure 5B

Plan of Scottsdale Pond Improvements



-  NATIVE TREES (T1-T2)
-  NATIVE SHRUBS AND GRASSES
-  IRRIGATED MARSH
-  COBBLE

0 400  
Feet

SOURCE: Environmental Services Associates

Scottsdale Marsh Enhancement / 960095

**Figure 6**

Proposed Revegetation and Landscape Planting -  
Median Planting

### *Riparian Wetland*

Riparian wetland planting will enhance the existing riparian community and provide screening of adjacent residences and human use areas. Planting designed to enhance the existing riparian community will be focused near the Donna Street extension (Pond C). In this area, red willow, walnut, arroyo willow, valley oak, buckeye, cottonwood, box elder, Oregon ash and alder will be densely planted (Figure 5A). The understory in this area will be planted with California rose, ninebark and marsh baccharis (see Appendix C).

Riparian trees also will be planted on the western edge of Ponds A, B and C, on the southern end of Ponds E and F, on the eastern edge of Scottsdale Pond, and on the northern and eastern edges of Pond D to screen views of the adjacent residences and Highway 101. Species composition will differ between these sites based on elevation and inundation tolerance (Figure 5; Appendix C). Willows and alders, which can tolerate relatively high degrees of inundation, should be planted around Scottsdale Pond, Pond D and at lower elevations around Ponds A, B and C. In higher areas in Ponds A, B and C and in Ponds E and F (where plantings would occur on the top of the berm), valley oaks and buckeye will be most appropriate. On the north end of Pond D, cottonwoods will be planted. In all areas, riparian vegetation should be densely planted to mimic the structure of natural riparian systems and to ensure that views are screened. A 10-foot setback (non-planting zone) will be maintained between vegetation plantings and residences for fire protection. These riparian areas will not be irrigated.

### *Seasonal Wetland*

Seasonal wetland planting is designed to enhance wetland habitat and diversity and to screen views of residences (especially on the eastern side of Ponds A, B and C). Seasonal wetland planting will occur at basin elevations with a final grade between 2.0 and 3.0 feet in Ponds A, B and C (see Figure 5). These areas will be flooded for a portion of the year (winter) but will be dry for most of the year (summer). Gumplant, western goldenrod, heliotrope, aster, poverty weed, leymus and spikerush would be appropriate species for planting in these areas. Seasonal wetland planting should be moderate to densely planted. These areas will not be irrigated.

### *Upland Transitional*

A mix of shrubs, grasses and forbs will be planted in the upland areas around all basins to provide native habitat and to discourage human intrusion into the marsh and pond areas (Figure

5, Appendix C). Native shrub species appropriate to the uplands (levee slopes) include coyote brush, toyon, blackberry, elderberry, lupine and coffeeberry. On the habitat island, only native grasses (e. g., purple needle grass) will be planted in order to encourage waterfowl loafing and nesting (Strait 1996). Trailside areas and basin edges will have one of two planting mixes. Where human and domestic pet intrusion is to be discouraged (i. e., around Ponds A, B and C), blackberry and coyote bush will be densely planted. Where human and domestic pet intrusion is less likely and the resource less sensitive (Ponds E and F), shrub plantings will be less dense and a greater proportion of bunch grasses will be planted. Adjacent to trails (i. e., around Scottsdale Pond and Ponds D, E and F), coyote bush, toyon and coffeeberry will be planted. Permanent fencing and a temporary automatic drip irrigation system (for use only through the first dry season) will also be installed only in these trailside areas.

#### *Turf and Landscaping for the Scottsdale Pond Recreation Area*

Planting in the Recreation Area at Scottsdale Pond will include turf, shrub and tree planting designed to block winds, direct views and to separate human and wildlife uses. Turf and a permanent irrigation system will be installed in the recreation area adjacent to Scottsdale Pond (see Figure 5B). The turf should be drought tolerant and able to withstand average public use. Seed installation of Enduro fescue is recommended for this area (See Appendix C). Shrubs and small trees, such as lupine, coyote bush, oaks and willows, will be planted between the recreation area and the adjacent wetland in order to buffer impacts to the wetlands. Tree planting will be focused around the picnic area to block prevailing winds. Shrub planting will be focused around the recreation area entryway.

#### **Median Planting**

The median planting is designed to increase the aesthetic qualities of the site to screen or open views and signal entrance to the City gateway, while not detracting from the natural marsh beauty. This is achieved by varying plant height and density, and topography within the median. The mass and height of proposed median planting varies throughout the project area. For example, tall screening masses composed of single species are proposed to block views of the Highway.

Native and non-native plant species are planned for the median (see Figure 6 and Appendix C). Non-native plants selected for median planting will mimic the color and form of nearby wetland natives, so as not to detract from the wetland aesthetics. No aggressive invasive species will be

used. Median plantings will require irrigation. The City's standard automatic drip irrigation system will be installed in these areas. In the median eight inch offsets (in which no tree plantings will occur) will be maintained around watermains and the aqueduct.

### *Trees*

Tree planting in the medians will be restricted to the central portions of large medians (no trees will be planted within two feet of the curb) so that views of traffic at turning areas will not be blocked.<sup>9</sup> The northern and southern ends of Redwood Boulevard will be planted with mostly valley oak, cork oak, buckeye and cottonwood. These will be densely planted to block views of the Highway and to direct views toward the marsh. Near the Donna Street extension riparian enhancement area, riparian type vegetation will be planted such as alder and cottonwood. The understory vegetation in these areas will be composed of shrubs and herbs (see Figure 6A for a graphic representation of this planting).

### *Shrubs*

Shrubs will be planted as understory in tree dominated areas and as the dominant cover in other areas, particularly where views across the project area or of on-coming traffic need to be preserved (see Figure 6A). Native shrubs appropriate for median planting include lupine, toyon, elderberry, coffeeberry and coyote brush.

### *Irrigated marsh / Grassland*

Irrigated marsh plants will be planted in narrow medians located near the intersection of Redwood and Rowland Boulevards (see Figure 6A for a graphic representation of this planting). These areas are designed to contain low marsh-like vegetation that does not block views of traffic and that mimics, and does not detract from, the adjacent wetlands. Irrigated marsh plants will be bordered by a 3 foot mortared cobble edge around the median island (Figure 6B). Plantings for the irrigated marsh median landscape component will include marsh plants such as umbrella sedge, leymus, sedge and rush and other plants that resemble marsh plants such as horsetails and purple needle grass.

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<sup>9</sup> Also no trees will be planted within 1.5 feet of the median curbs.

TREES:  
NONE

SHRUBS:



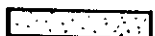
CAREX ATHROSTACHYA



EQUISETUM SP.



ELEAMUS GLAUCA



STIPA PULCHRA



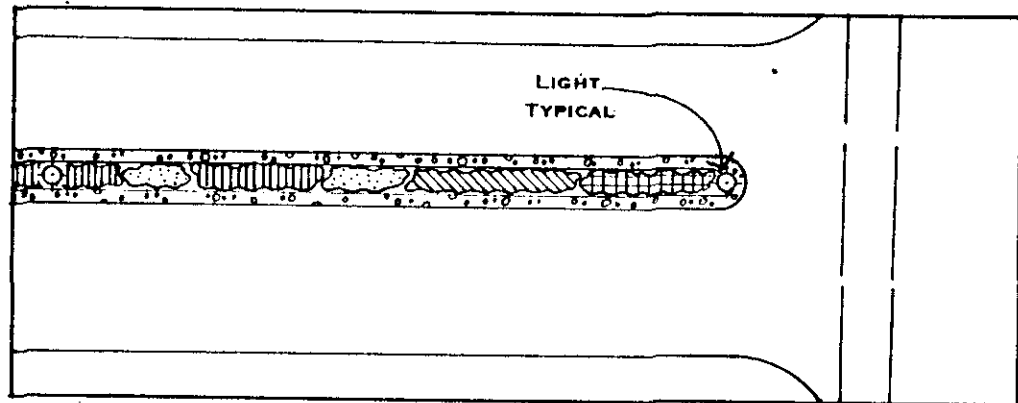
3" DIA. COBBLE EDGE, MORTARED IN PLACE

SEDGE

HORSETAIL

BLUE OAT GRASS

PURPLE NEEDLE  
GRASS



IRRIGATED MARSH

1' = 50'-0"

TREES:

QS

QUERCUS SUBER

CORK OAK

SHRUBS AND GROUNDCOVERS:

SS

SALIX SP.

WILLOW



BACCHARIS PILULARIS

COYOTE BRUSH



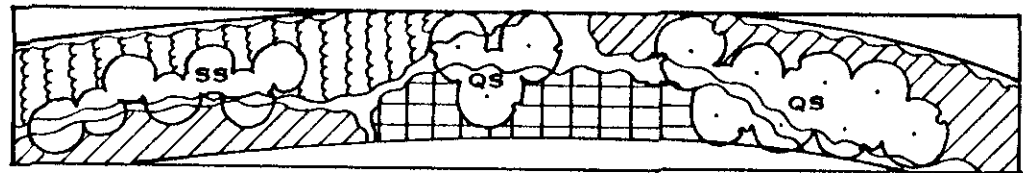
IRIS DOUGLASSIANA

DOUGLAS IRIS



ACHILLEA MILLEFOLIUM

YARROW



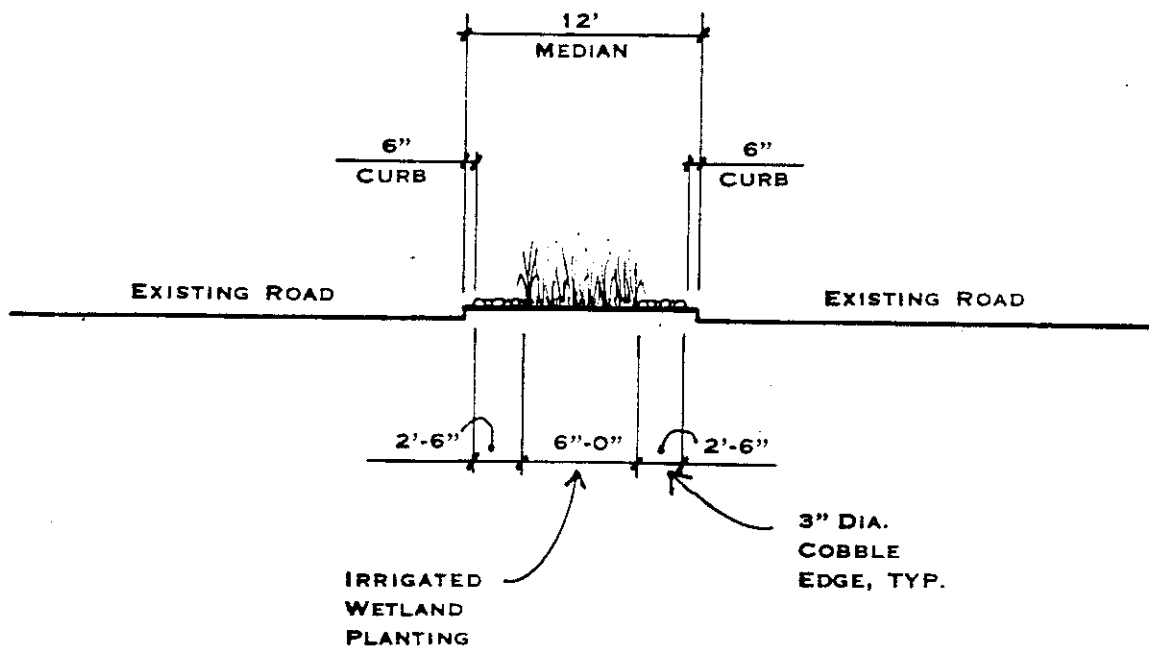
MEDIAN PLANTING

1' = 50'-0"

PLANTING VIGNETTES - MEDIAN AND IRRIGATED MARSH

1" = 50'-0"





IRRIGATED MARSH PLANTING IN MEDIAN - SECTION

1" = 10'-0"

## Implementation

### Exotic species removal

Prior to any revegetation or substrate amendment, aggressive non-native plants (shrubs and trees) will be removed. In particular aggressive invasive species such as pampas grass, fennel, redwood trees, Mediterranean broom, cotoneaster and firethorn, which commonly occur in the uplands surrounding the basins, will be removed. The method of exotic species removal varies by plant, however the most successful methods include manual removal (e. g., weed wrenches for broom) and a combination of manual removal (cutting) and herbicides (such as Rodeo or Roundup) for firethorn, pampas grass and fennel. Volunteers from community groups under the supervision of a qualified botanists could participate in the removal of exotic species from the marsh area.

### Soil Testing and Preparation

In addition to soil testing for potential fill (see above), soils in existing medians where planting will occur should be tested for pH and texture. Based on the findings of these tests, soils may need to be pit amended and ripped or disked to establish a suitable root zone (especially on basin slopes). When used, fertilizers will be time released. Mulch will be applied over all newly planted areas to decrease evapotranspiration.

### Planting alternatives and implementation

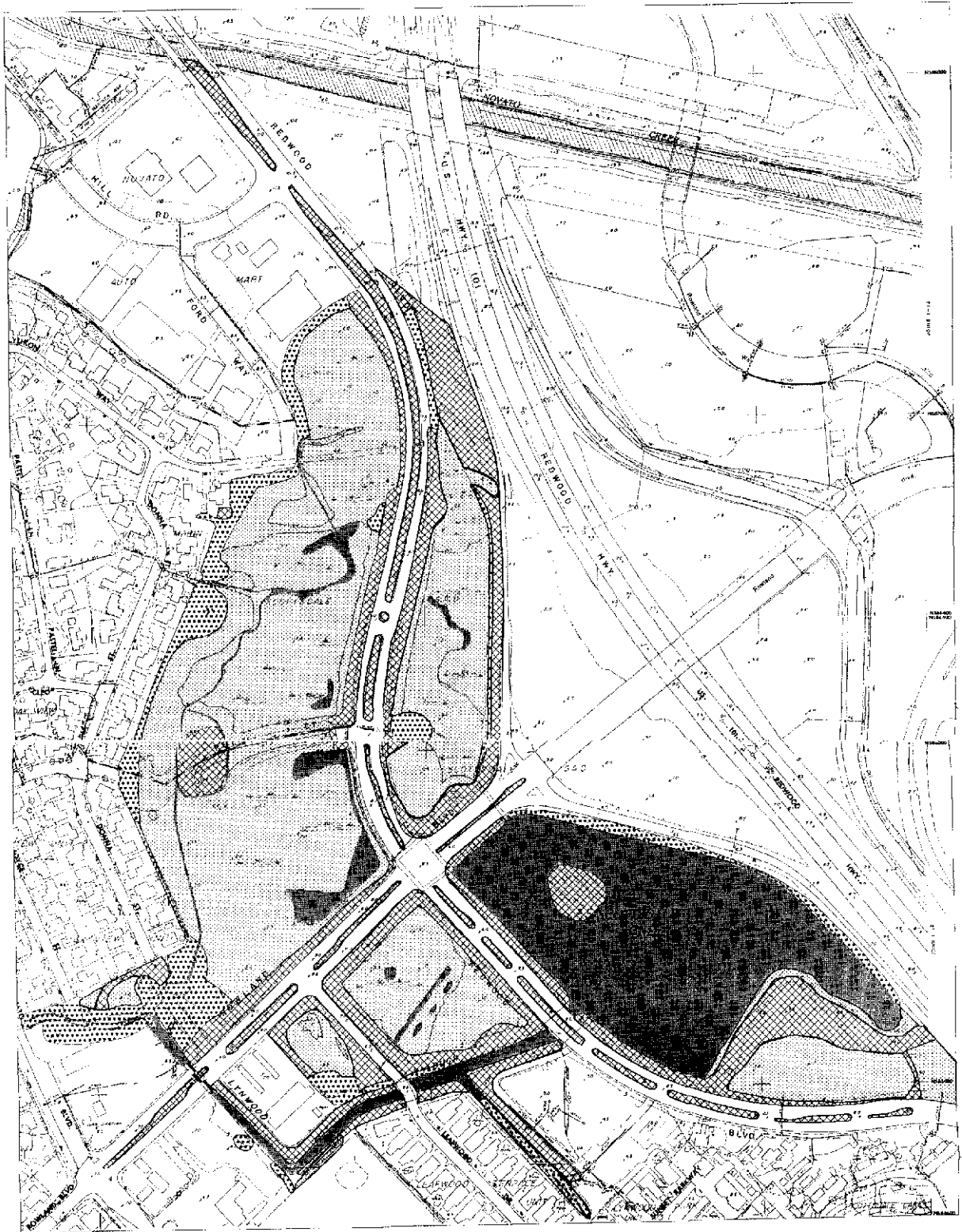
Revegetation of the marsh could be conducted by professional landscaping or restoration specialist or by the Marin Conservation Corps or local citizen groups and volunteers under the supervision of a qualified botanist or a landscape architect. Seed or cuttings should be collected from the site or be provided by a local native plant nursery with local seed sources.





Prior to planting, setback areas around watermains and aqueducts in the marsh and median will be staked on the ground to ensure that no tree planting occurs in these zones.

## Management and Monitoring

Irrigation systems and turf and median planting will need to be maintained by the City. Therefore irrigation equipment should be the same as those currently used by the City.

The success of the restoration will be monitored to ensure that the efforts have achieved the monitoring goals (to achieve a relatively self-sustaining and diverse system). Vegetation survivorship will be monitored to ensure that the proposed vegetation and habitat types (see Figure 7) are achieved. The planted areas will be monitored annually for plant survival until 80% natural cover is achieved (with 90% confidence limits). Natural cover will be determined by measuring an established reference site in the project region. Similarly plant and animal species diversity should be measured against a reference site. Comparable diversity (with 80% confidence limits) should be achieved within five years. If these performance criteria are not met additional revegetation occur. Annual monitoring of exotic species will occur and on-going (in perpetuity) exotic species removal will be required, especially in the upland and seasonal wetland areas. Long-term monitoring and maintenance of the natural marsh system could be accomplished through a volunteer efforts (e. g., by members of the community or by local school groups) and coordinated through a stewardship program. Volunteer monitoring activities should be performed under the direction of a qualified botanist or landscape architect.



-  Open Water ( ponds, sloughs, major channels)
-  Emergent/Seasonal Wetland
-  Riparian
-  Upland

### 3.3 RECREATION AND CIRCULATION

The recreation and circulation element of this Conceptual Enhancement Plan was designed to build on existing pedestrian and bicycle routes and to focus use and direct users to activity centers and away from habitat areas where disturbance is unwanted. Trail and sidewalk development is proposed to enhance existing routes. The two main recreational focus areas include the Recreation Area at Scottsdale Pond, the Promenade at Scottsdale Pond, and the Viewing Platform at Peter Court. An additional passive recreational trail and seating area would be developed on the south side of Ponds E and F. Existing on-street parking along Redwood and Rowland Boulevards is adequate to accommodate these expanded recreational uses. Protective features, for wetlands and wildlife use, that are incorporated into the design include fencing at access points to the marsh and around proposed use areas, vegetation planting and open water features. The following actions from Table 1 are achieved in this plan:

- Protection of wildlife habitat through the installation of fencing (Strategy 2.E)
- Increased recreational opportunities through the development of interpretive and viewing features at Scottsdale Pond and Peter Court (Objectives 4 and 5)
- Extension and development of trails and sidewalks to enhance pedestrian access to and circulation within the site (Strategy 4.A)
- Development of a passive recreational area at Scottsdale Pond and at Ponds E and F (Strategy 4.B)

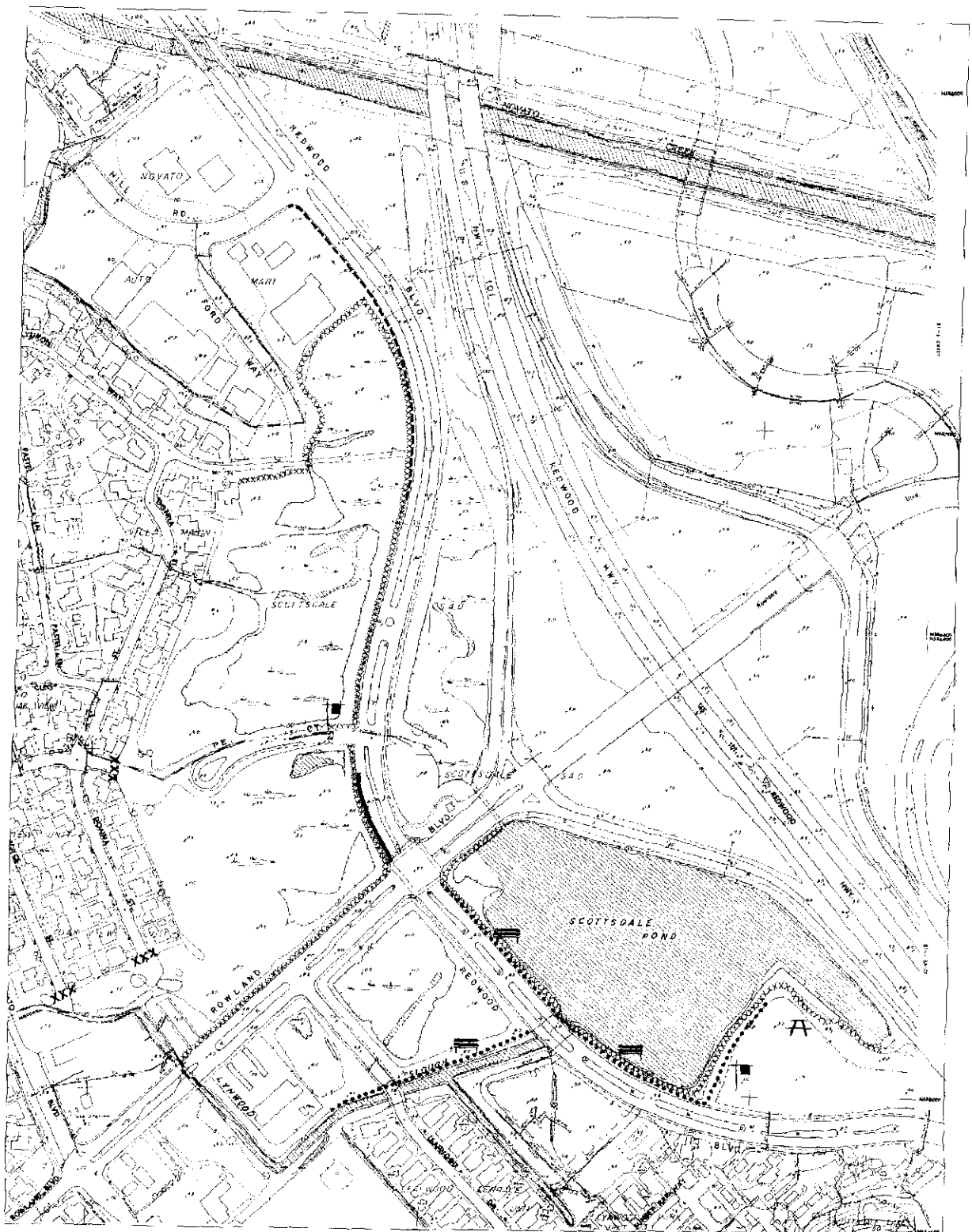
Some existing uses that are not planned for under this plan include model boating, waterfowl feeding and fishing in Scottsdale Pond. The existing waterfowl feeding area at the intersection of Redwood and Rowland Boulevards will be eliminated. Signs will caution against fishing as the water quality of Scottsdale Pond is not known and consumption of fish from the pond may present health issues.

#### Plan Components

##### Trails and sidewalks

Trails and pathways in the project area have been designed to match existing circulation materials, the site's physical features (the colors and textures of the marsh), for longevity, ease of maintenance (Strategy 6.A) and pedestrian safety.

Concrete will be used to extend the sidewalk on the northern portion of Redwood Boulevard (see Figure 8). This substrate is durable, relatively low in cost, is consistent with the existing



- |  |                        |  |                    |
|--|------------------------|--|--------------------|
|  | Bicycle Path Extension |  | Interpretive Signs |
|  | Sidewalk Extension     |  | Viewing Platform   |
|  | Earthen Trail          |  | Picnic Tables      |
|  | Fencing (3 foot)       |  | Benches            |
|  | Fencing (4 foot)       |  |                    |

circulation in the area and can be maintained with existing City resources. Approximately 1,200 linear feet of paving will be placed here. An 8 foot wide concrete or asphalt access trail with 3 foot decomposed granite shoulders on either side will be placed around Scottsdale Pond, connecting the recreation area and Redwood Boulevard (see Figure 5B). The bicycle path that was removed to install a left turn lane from Redwood Boulevard to Rowland Boulevard will be replaced. The curb and sidewalk on the northwest corner of the intersection will be shifted to the west by 6 feet. The on-street bike lane and sidewalk will be constructed with asphalt and concrete, respectively (see Figure 4C).

The access to Scottsdale Pond and the trail on the south side of Ponds E and F (where informal paths currently exist) will be constructed with an 8 foot wide crushed aggregate paving (Figure 8A)<sup>10</sup>. This is a more natural substrate that will blend with the surrounding environment in this area. All new paths will be on prepared and compacted sub base.

All trail corridors will be flanked by a minimum of 4 feet of buffer planting on either side of the trail (see description of shrub planting in the Marsh Enhancement Section of the Revegetation and Landscaping Plan).

#### Benches

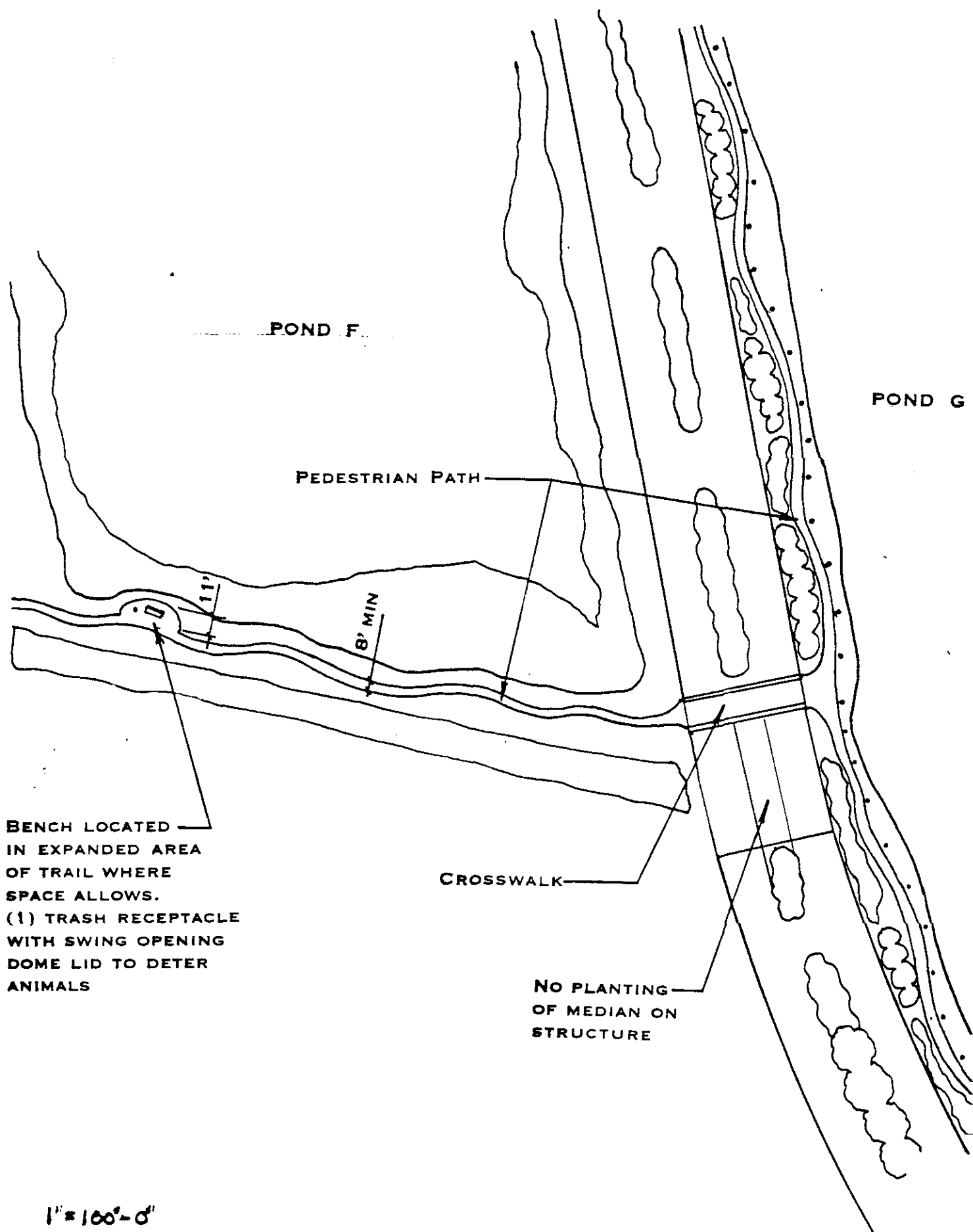
Two benches will be installed along the pathway around Scottsdale Pond, two at Scottsdale Pond overlook, one about half way between Redwood Boulevard and Leafwood Road (about 300 feet from Redwood Boulevard) on the south side of Pond F, and two at the Peter Court viewing platform (see Figures 5B, 8A and 8B). These will be simple unobtrusive amenities that are visually compatible with the natural surroundings and are relatively vandal resistant. Standard City wood benches (Du mor) will be installed. Benches will be permanently anchored in the soil or concrete base. In all locations where benches are to be provided, trash receptacles will also be provided (see Appendix D for a description of site furnishing options).

#### Safety and Access Features

Safety will be improved in the project area. A pedestrian crossing sign will be installed near the existing crosswalks at Redwood and Rowland Boulevards. The streetlights on Redwood and Rowland Boulevards will also be completed and illuminated (see Appendix D).

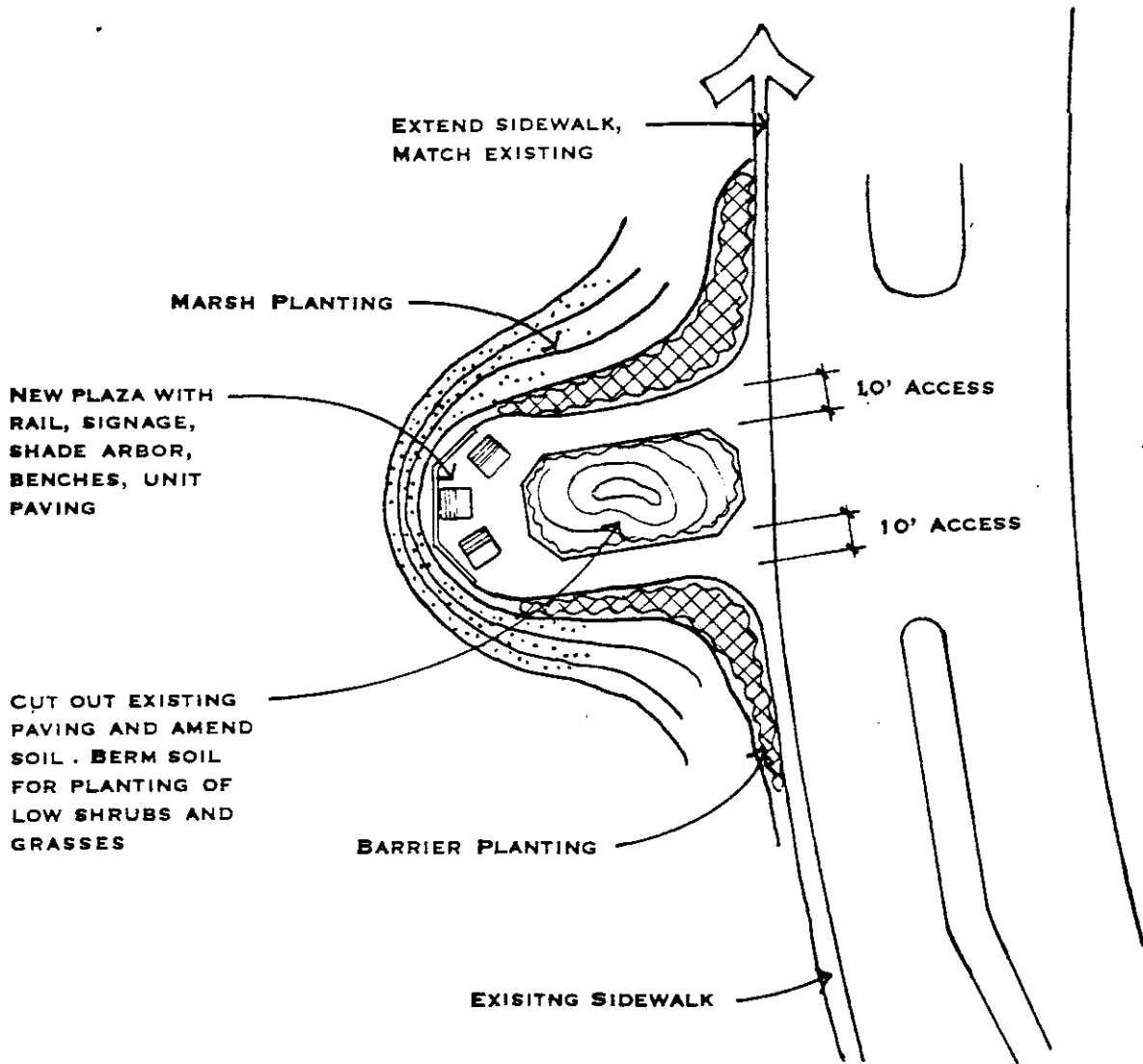
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<sup>10</sup> Except where an additional 3 feet will be needed for bench installation.



1" = 100'-0"





**PLAN OF PETER COURT IMPROVEMENTS**

1" = 50'-0"

Handicap access will be available in all developed recreational and education areas in the project area (i. e., no steps or barriers to wheelchairs will be installed and no grade changes over 6 percent will be constructed). Signage will also be designed for handicap access (see below).

## Fencing

Fencing will be installed to restrict human and domestic animal access to the site. Two types of fencing are proposed - six foot high chain link fencing (with redwood lath) and four foot high coated black vinyl chain link fences. The six foot high fences would be located at all informal access points to the marsh (Ponds A, B and C) on the western side of the project area (see Figure 8). These fences would be screened on the marsh side with tall vegetation (i. e., trees such as willows and oaks). A gate will be installed in the six foot high fence at the end of Adele Street that will allow the Fire Department and the Marin / Sonoma Mosquito and Vector Control District access to the site. Four foot high fencing will be installed about half way down basin slopes around Scottsdale Pond and in areas adjacent to the Peter Court viewing platform. In all cases, shrubs will be used to screen views of these fences from public areas.

Metal traffic bollards will be used to restrict unauthorized vehicles from the entering Peter Court viewing areas and the Scottsdale Pond Recreation Area (see Figure 5B and 8B and site furnishings in Appendix D).

## Signage

Two interpretive areas will include signs - the Scottsdale Pond recreation area and the viewing platform area at Peter Court (Ponds B and C). Signage materials should durable, long lasting and vandal resistant. Interpretive signage could be constructed of wood, steel or fiberglass (see Appendix D for a description of signage alternatives). A removable Plexiglas coverplate will be used to cover wood or fiberglass signs for vandal resistance. The signs should stand on two 4" x 4" posts (12" minimum dimension) and should be located approximately 3 feet off the ground. At the viewing platform the sign could be mounted on the railing. The sign panel itself will be angled slightly for ease of reading. Sign content should be easy to read (may incorporate Braille) and be illustrated with a pictures or maps. Possible interpretive subjects include waterfowl ecology, freshwater marsh ecology and enhancement design.<sup>11</sup>

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<sup>11</sup> One of these signs will explain that the marsh in Pond A is named "Jake's Marsh".

Additional signs encouraging the use of trash receptacles and dog waste bags and discouraging fishing, swimming, waterfowl feeding and the release of animals into the marsh will also be installed at Scottsdale Pond. North of Rowland Boulevard (around Ponds A, B and C) will be a designated leash required zone and signage to that effect will be installed.

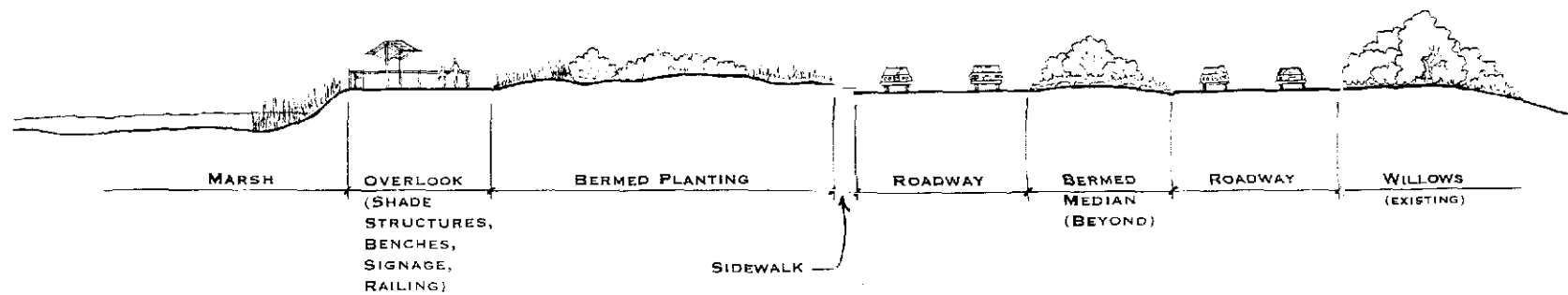
#### Peter Court Viewing Platform

A secluded viewing platform with a short 10 foot wide circular access trail, shade areas and interpretive signs will be developed off Redwood Boulevard at Peter Court (see Figures 8B and 8C). The Peter Court viewing platform will be located above an existing asphalt concrete road in order to take advantage of the existing asphalt sub base. The viewing platform will be composed of a durable and vandal resistant materials, will be easy and inexpensive to repair and will not detract from the aesthetics of the marsh. Approximately 80 feet of paving will be retained on the east side of Peter Court (see Figure 8B). The central portion of the viewing platform will be excavated, and elevations will be raised by two feet (see Figure 4C). Standard landscaping compaction will be used. Three large trees (oaks) will be planted here to give the viewing platform a sense of seclusion and entryway (see Figure 8C). A pathway (on the existing asphalt) will encircle these trees. Removable bollards will be used to restrict unauthorized vehicle access (see Appendix D for a description of site furnishings). As open water and steep slopes will be located below the viewing platform, railings will surround the platform to prevent children and dogs from entering the marsh. Metal railings (galvanized, baked or enamel finished to prevent corrosion) will be used. One trash receptacle will be provided at the Peter Court overlook.

#### Scottsdale Pond Recreation Area and Promenade

At Scottsdale Pond a picnic facility, turf area, circular trail and overlook will be developed (see Figures 5B, 8D and 8E). The picnic area will include three picnic tables (to accommodate three groups) and two trash receptacles (see Appendix D for a description of these site furnishings) and will be secluded and blocked from prevailing winds by tree planting. The picnic tables will be anchored in concrete paving. The turf area will be located adjacent to the picnic area and will be surrounded by a decomposed granite walking and jogging pathway (see Figure 8E). A bicycle rack will also be provided at the Recreation Area (see Appendix D for a description of site furnishings).

A public promenade is proposed for the western edge of Scottsdale Pond. This promenade will include a meandering pathway that affords views of Scottsdale Pond, low level lighting, trailside

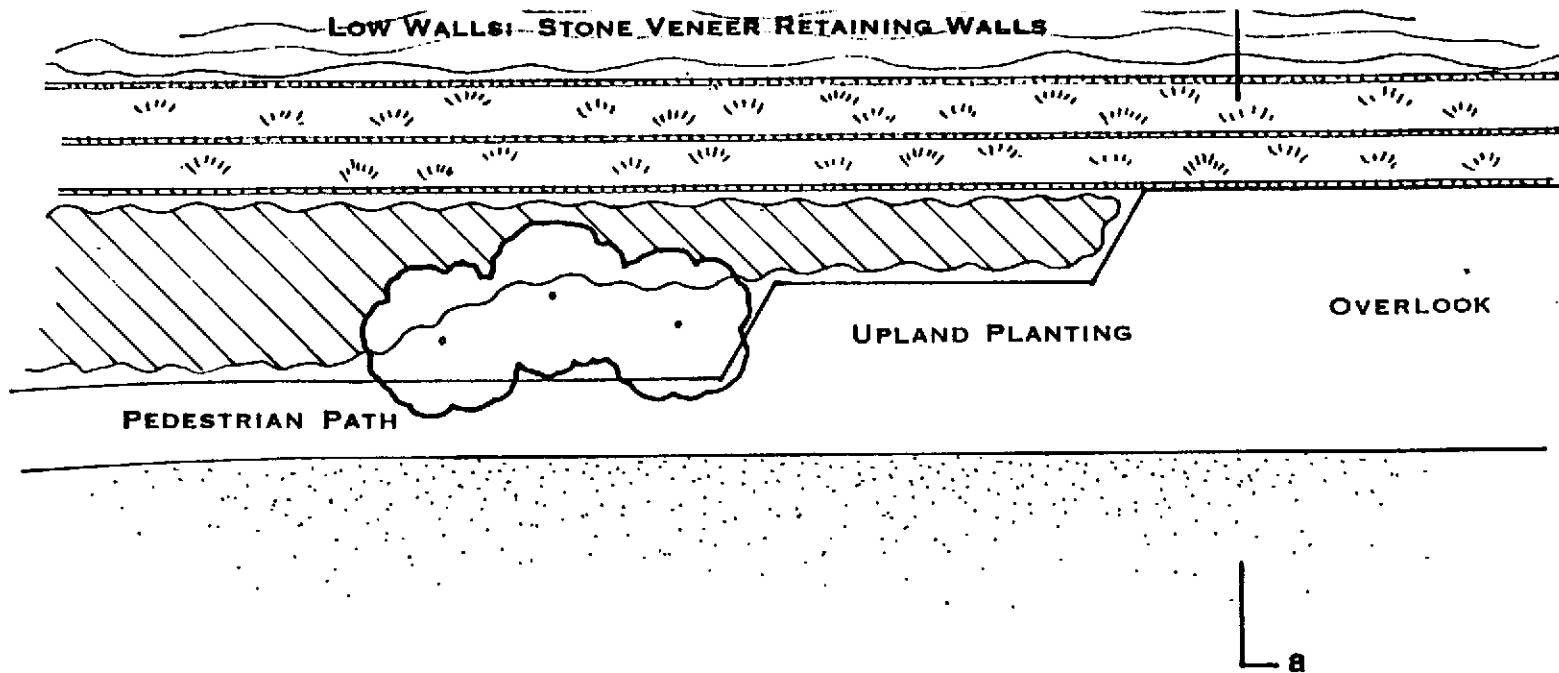


SECTION THRU OVERLOOK AT PETER COURT

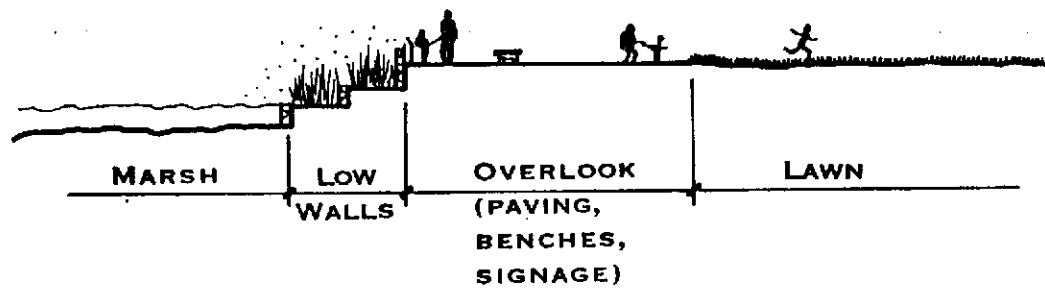
1"=20'-0"

SOURCE: Studio Green

Scottsdale Marsh Enhancement / 960095 ■  
**Figure 8C**  
 Section Through Overlook at Peter Court



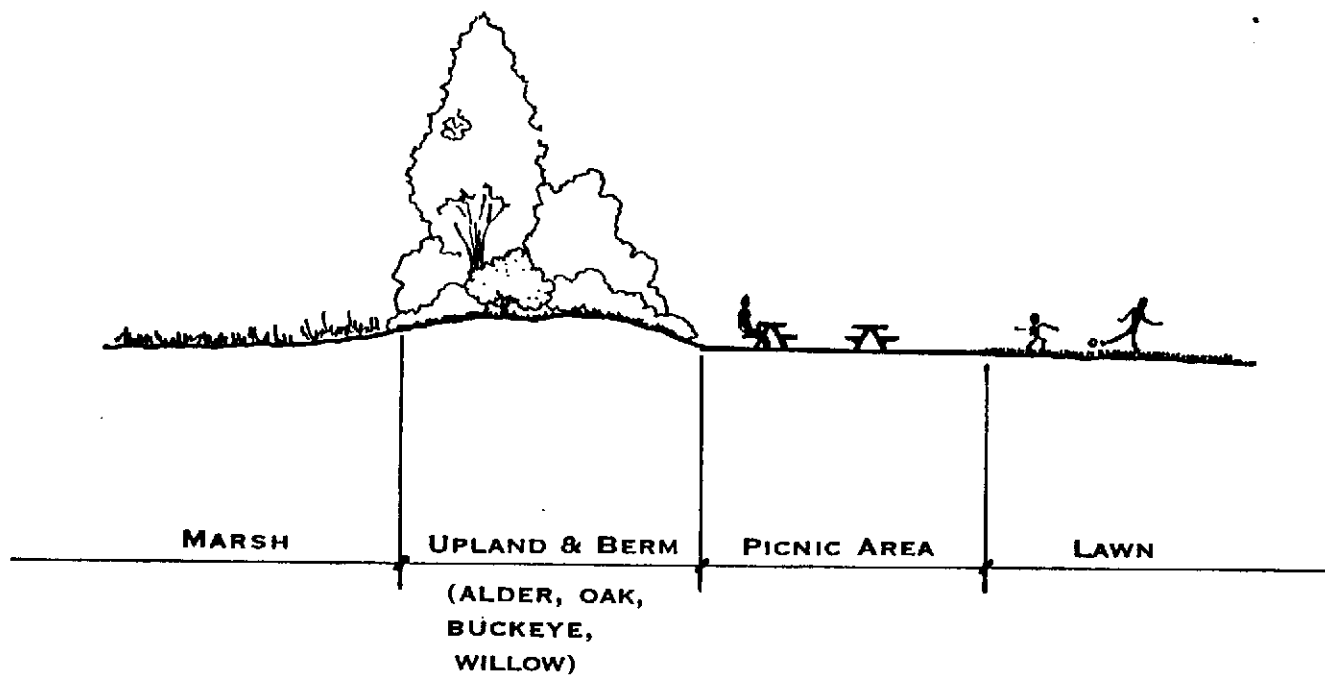
**PLAN**



**SECTION a**

**SECTION THROUGH OVERLOOK AT SCOTTSDALE POND**

1"=20'-0"



**SECTION THROUGH SCOTTSDALE PICNIC AREA**

**1"=20'-0"**

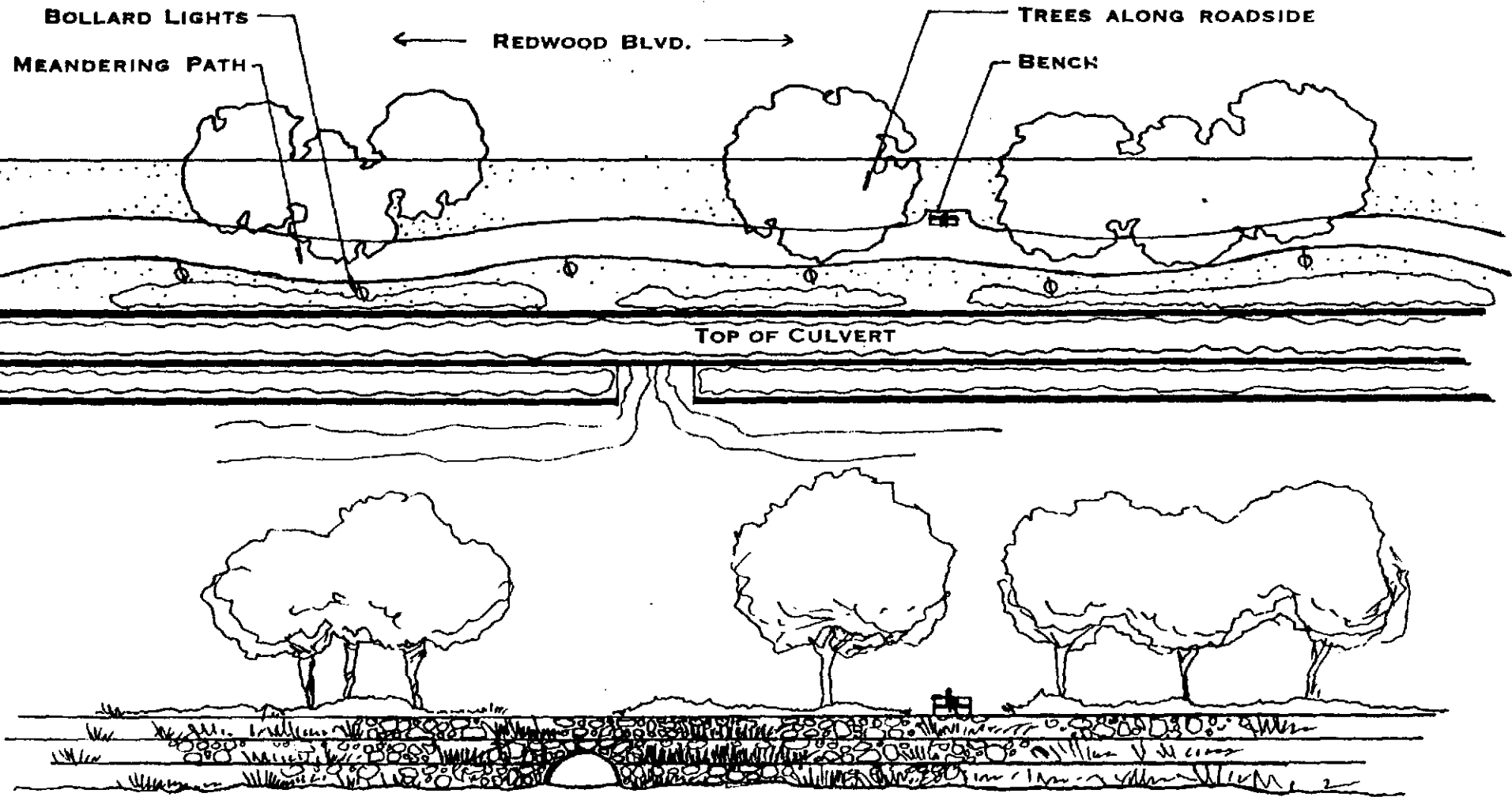
vegetation and a rock retaining wall intended to improve views of the pond area from the Recreation Area, Highway 101 and from Rowland Boulevard to the east (Figure 8F). The rock retaining wall will extend from near the weir at Scottsdale Pond to the intersection of Redwood and Rowland Boulevards. In order to construct this wall and not compromise the flood capacity of the pond, equivalent excavation (to that removed by placement of the wall) into the pond side slopes must occur. This wall will be composed of cultured stone or a comparable material.

### Implementation

The success of the marsh enhancement depends on the cooperation and support of local residents, especially those whose properties abut the marsh. Educational material describing the importance of restricting human and domestic pet intrusion into the marsh and requesting voluntary feral cat control (e. g., restraining from feeding feral cats) could be distributed to local residents.

### Maintenance

The recreation and circulation components that will require maintenance will be the trails, benches, picnic tables and signs. Crushed aggregate paving is porous and therefore will require maintenance to keep it smooth and free of weeds. Benches, tables and signage will need to be monitored for vandalism. Periodic painting and replacement of this equipment will be required. The City will need to expand existing Monday and Friday trash pickup to accommodate additional receptacles.



ELEVATION OF PROMENADE AT REDWOOD BLVD.

1"=20'-0"



## **4.0 REPORT PREPARERS**

---

This report was prepared by Environmental Science Associates, San Francisco, in association with Philip Williams Associates (PWA), Studio Green Landscape Architecture, and Katherine Cuneo Environmental Consulting (KCEC). The following staff members contributed to the content of this report.

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Leslie Moulton  
Yuki Kawaguchi  
Ron Teitel

### **PWA**

Elizabeth Andrews  
Robert Coats

### **Studio Green**

Janet Green  
John Merten

### **KCEC**

Dr. Katherine Cuneo

## 5.0 REFERENCES AND PERSONS CONTACTED

---

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## APPENDIX A

### List of general objectives for the site

#### Flood Control

- maximize flood control (Marin County Flood Control)
- maximize ponding (Marin County Flood Control)
- handle overflow from Baccaglio Basin (Marin County Flood Control)
- manage debris (Marin County Flood Control)

#### Biology

- optimize/maximize wildlife habitat (USFWS)
- migratory waterfowl - nesting and loafing (USFWS)
- turtle basking improvement (Marin County Flood Control)
- manage human use (USFWS)
- manage waterfowl feeding (City of Novato, CIP)

#### Recreation

##### Scottsdale pond facilities

- picnic facilities (City of Novato, Parks and Recreation)
- fishing / fishing dock (City of Novato, Parks and Recreation)

##### Scottsdale Marsh features

- wildlife viewing platforms (City of Novato, Parks and Recreation)

##### Area features

- walking and biking trails/paths (City of Novato, Parks and Recreation)
- trailside seating, benches (City of Novato, Parks and Recreation)

#### Education

- interpretive features (City of Novato, General Plan)
- development of stewardship and educational programs (City of Novato, General Plan)

#### Aesthetics and Landscaping

- attractive (USFWS)
- wetland planting in median (City of Novato, CIP and Caltrans)
- vegetative screening between sidewalks and marsh (City of Novato, CIP)
- landscaping along perimeter pathways (ESA)
- debris removal (City of Novato, CIP)

#### Water quality/human health

- address summer fish kills - aeration system (City of Novato, CIP)
- mosquito control (City of Novato, CIP)
- dog waste control on paths (plastic bag program) (City of Novato, CIP)
- reduce erosion in Scottsdale Marsh (LSA)
- evaluate water quality in Scottsdale Pond (City of Novato, CIP)

#### Cost

- low operations and maintenance cost (USFWS)

#### **Monitoring**

- Establish a reference site (USFWS)

#### **Suggested Actions for Implementing Objectives**

##### **Flood Control and Hydrology**

- remove Peter Court (Marin County Flood Control)
- improve culvert to Vintage Oaks (Marin County Flood Control)

##### **Aesthetics**

- remove Donna Street property (Marin County Flood Control)

##### **Marsh Enhancement**

- develop habitat islands in Peter court and Scottsdale Pond (USFWS, City of Novato, CIP)
- deep water feature for restricted access (USFWS)
- diversity in water depths (USFWS)
- plant with indigenous species (USFWS)
- fencing, vegetation screens and buffers (ESA)

##### **Recreation**

- develop meandering pond-side trails, boardwalks one way or loop routes (LSA)
- directional and informational signage (LSA, ESA)
- exhibits self guided tour and brochure (City of Novato, Parks and Recreation)

## APPENDIX B



THE CITY OF  
**NOVATO**  
CALIFORNIA

THE CITY OF NOVATO AND  
ENVIRONMENTAL SCIENCE ASSOCIATES  
ARE SPONSORING A

**SCOTTSDALE MARSH ENHANCEMENT  
PLANNING WORKSHOP**

900 Sherman Avenue  
Novato, CA 94945  
415/897-4311  
FAX 415/897-4354

June 12, 1996  
7:00 p.m.

Hill Community Room  
1528 Hill Road  
(Behind the Margaret Todd Senior Center)

The City of Novato will conduct a workshop designed to identify a preferred conceptual plan for Scottsdale Marsh and its associated wetlands and median landscaping. Topics to be discussed include design and objectives for flood control/hydrology, biological resources, recreation, education and landscaping/aesthetics. Examples of potential site uses and design features include pathways, an interpretive center, viewing platforms, picnic facilities, excavation to improve flood flows and capacity, migratory waterfowl habitat enhancement and wetland/riparian enhancement.

The workshop will include a brief description of the site's characteristics and preliminary concepts for the site (by the City's consultant, Environmental Science Associates). Following this introduction, an open discussion regarding the proposed features will take place. Based on the input and opinions expressed during this workshop, a conceptual plan for the area will be developed. The City is soliciting input from interested parties to participate in the development of a preferred conceptual plan that will guide future enhancement uses of the Scottsdale Marsh area.



## Notes and comments on the Preliminary Conceptual Plan

1. What is the status of the private parcel near Donna Street and how would it affect the design?
2. Who owns the parcel between the Donna Street extension and does County Flood Control have an easement over it?
3. Duck feeding should not be encouraged at Scottsdale Pond. Concern for disease, liability, etc.
4. Control access from neighborhood with fencing.
5. Is there a viable fishery in Scottsdale Pond? Which species are known to occur there?
6. Could the habitat island be created from fill in Scottsdale Pond?
7. Interpretive use should be concentrated. Not in favor of interpretive trail.
8. Fishing and model boating should not be encouraged at Scottsdale Pond. Fishing is a liability and there are health issues
9. Signage should be used for human access control.
10. Interpretive signage should be focused (e. g., kiosks)
11. Human use is too spread throughout the site. Too much human use encouraged at Scottsdale Pond.
12. In favor of an observation area at one end of Scottsdale Pond.
13. Displacement of other vegetation by cattails, a concern?
14. Concern that the picnic facility may encourage duck feeding and litter. Benches OK.
15. Should not encourage bird use and more recreation - one or the other.
16. Is it an appropriate use of USFWS funds if supporting more recreation.
17. Picnic area should provide a passive recreational experience, be user friendly and have controlled access points.
18. In favor of Peter Court as an interpretive area only.
19. The fill at Redwood and Rowland Boulevard should be removed, will also discourage feeding.
20. In favor of perimeter planting around Scottsdale Pond.
21. In favor of fencing off portions of Scottsdale Pond. Black vinyl fencing works well.
22. In favor of dirt paths, vegetation screening and fencing (half way down slope) on the perimeter of ponds.
23. Access to ponds from Redwood Boulevard should be eliminated.
24. Benches on sidewalk at Scottsdale Pond.
25. Water quality study for Scottsdale Pond suggested. Bioassay
26. Water quality could be improved by use of socks.
27. Contour sides of Scottsdale Pond to reduce steepness, encourage vegetation growth and enhance waterfowl habitat. Flood control could be compensated by removing fill near the intersection.
28. In favor of extending the sidewalk north on Redwood Boulevard.
29. Eliminate domestic ducks from Scottsdale Pond.
30. Remove used car parking on Rowland Boulevard and Donna Street Extension.
31. Do not include fishing pier in design.
32. Who will maintain the site, who will remove litter and illegal dumping? Will additional trash receptacles be provided?
33. In favor of a boardwalk that provides access to marsh areas for school groups.
34. Not in favor of boardwalks into the marsh.
35. Where could school buses be accommodated?



900 Sherman Avenue  
Novato, CA 94945  
415/897-4311  
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**Mayor**

Ernest J. Gray  
Mayor Pro Tem  
Pat Eklund

**Councilmembers**

Michael Di Giorgio  
Carole Dillon-Knutson  
Cynthia L. Murray

**City Manager**

Roderick J. Wood

## **NOTICE OF PUBLIC MEETING**

### **Scottsdale Marsh Enhancement Workshop**

**Time:** 7:30 p.m.  
**When:** September 17, 1996  
**Where:** Margaret Todd Senior Center  
1560 Hill Road  
Meeting Room 3

A second meeting has been scheduled to review the revised Scottsdale Marsh Enhancement Plan. The public is welcome to attend and comment on this issue.

If you have any questions, please contact Larry Dito, 897-4323.

SCOTTSDALE MARSH  
ENHANCEMENT -  
MEETING #2

Sept. 17, 1996

1. Lisa Wayne, ESA, 301 Brannan St S.F. 94107
2. Leo Adamski City of Novato, CA 94945
3. Liz Lewis, Marin Co. FCD S.R. CA 94913
4. BRAD BEEDLE 59 Orchard Way Novato Park Rec (Chair)
5. Sandy Stohler City of Novato
6. ED SCHULZE 1 TENAYA LAKE NOVA 94947
7. Karen Skinner 157 Drakewood Pl., Novato 94947
9. BILL BURNS 1390 DONNA ST NOVATO 94947
9. EDITH SIMONSON 1396 DONNA ST NOVATO 94947
10. PAUL SIMONSON, 1396 DONNA ST " "
11. Dan Strait U.S. Fish & Wildlife Serv. Sacto 9
12. Gary Oates, ESA, 301 Brannan St., SF 94107
13. Allan Gere 725 Rowland Blvd NOVATO
14. Rick Fraites, 50 Forrest Rd, Novato 94947
15. Tom Nottin, CITY OF NOVATO, 701 Sherman Ave Novato 94945
16. SUSAN Stompe - 110 San Mateo Wy Novato 94945
17. Barbara Salzman 48 Admire Rd.  
Larkspur 94939



## **NORTH MARIN WATER DISTRICT**

999 RUSH CREEK PLACE • POST OFFICE BOX 146 • NOVATO, CALIFORNIA 94948 • (415) 897-4133 • FAX (415) 892-8043

September 27, 1996

Leo Adamski, Project Engineer  
City of Novato  
901 Sherman Ave.  
Novato, CA 94945

RE: Scottsdale Marsh Enhancement and Gateway Planting at Scottsdale Marsh, (95-009 & 93-001), Conceptual Enhancement Plan, July 1996

Dear Mr. Adamski:

The North Marin Water District provides water service to the area surrounding the above referenced project and circa 1965 constructed water facilities within the City Approved 1964 Scottsdale project, in particular Peter Court, anticipating residential and/or commercial development. The proposed Scottsdale Marsh Enhancement project now intends to reverse the original 1964 project plan and return the land back to original wetlands environment to improve flood control by removal of barriers including lowering Peter Ct.

To evaluate the proposed project concepts the District conducted flow tests to determine if certain water mains originally installed for the 1964 Scottsdale project can be removed. Ideally, water mains are looped to add reliability and improve fire flow.

The District has the following comments for the conceptual plans presented in the above referenced report. Conceptual plan areas are shown and highlighted on attached NMWD Facilities Maps H18 and H19.

### **Section 3.1, Conceptual Grading and Flood Control Improvement Plan**

#### Yukon Way & Ford Way extensions

The District requires watermains in these areas to remain in service. Maintain grade at Yukon & Ford right-of-ways & provide access (10' min) for repair & maintenance over the existing watermains. No trees are to be planted over the mains.

#### Peter Court

The District proposes to disconnect the 8" ACP watermain within Peter Court at Redwood Blvd. and Adele & Donna Streets, and to remove said ACP waterline if it will be disturbed by proposed excavations or storm drain removal. The watermain has approximately 3 ft of cover. The District's ballpark estimate for removal and disposal of 700 linear feet of said 8" ACP watermain is \$17,000.

#### Donna Street extension

The District requires this 6" watermain to remain in service. The watermain has approximately 3 ft of cover. The proposed excavation will require the District to lower the watermain at the Donna St. extension to Rowland. Maintain right-of-way and provide access



Leo Adamski  
September 27, 1996  
page 2

(10' min) for repair and maintenance over the watermain. The District's ballpark estimate for lowering 300 linear feet of said 6" watermain is \$25,000.

Median/Gateway Planting

The City must submit applications for water service meter for the park and for median island irrigation. Regulation 1 is included for your information; see section 1f. regards public parks. Maintain vertical & horizontal grade at the District's 30" aqueduct near the marsh area transition located adjacent to 6965 Redwood Blvd. (Christ Church). No trees are to be planted over the aqueduct. Maintain 8' minimum offset from the aqueduct for tree planting.

Other

Removal of fire hydrants & watermain extensions may be necessary in marsh enhancement areas. Removal of fire hydrants must be coordinated with and approved by the Novato Fire Protection District. The District's ballpark estimate for removal of said fire hydrants and watermain extensions is \$2,500 each.

**Section 3.2, Revegetation and Landscaping Plan**

Regulations 15 is enclosed for your information regards water conservation requirements including landscaping. Water conserving plants should be considered for medium islands. Provision of water for irrigated marsh is not in accordance with District Regulation 15 and should be avoided where possible. No trees are to be planted directly over the existing watermain in Rowland Blvd. or Redwood Blvd. Maintain 8' minimum offset from watermain for tree planting.

**Appendix A, List of general objectives for the site**

Cost

Where possible the City should work with involved agencies to minimize capital improvement costs. The District suggests all modifications be included in the project work scope and be paid for by the City.

For additional questions please contact Joe Kauwe at extension 400.

Sincerely,



Chris DeGabriele  
General Manager/Chief Engineer

CDJK:edw

- .. Attachments: Facility Maps H18 & H19  
District Regulations 1 and 15

cc: Edie Robbins  
Mike Moretti  
NMWD Job File 1156.00



IN REPLY REFER TO:

# United States Department of the Interior

## FISH AND WILDLIFE SERVICE

Private Lands Office  
2233 Watt Avenue, Suite 375  
Sacramento, California 95825-0509

October 2, 1996

Leo Adamski,  
City of Novato  
901 Sherman Street  
Novato, CA 94945

Subject: Scottsdale Marsh Conceptual Enhancement Plan, Comments

Dear Mr. Adamski:

It was a pleasure meeting with you and the others on the evening of September 17th to discuss the Scottsdale Marsh Conceptual Enhancement Plan (CEP). We are impressed with the quality of work that the City and Environmental Science Associates (ESA) have done in preparing a marsh enhancement plan that stresses improving the habitat for wildlife while balancing other interests that the community has in the area of the marsh.

During the meeting I expressed concerns about the components of the plan dealing with the water barrier, the use of native grasses, and the planting of shrubs on the habitat islands. Those are recounted below along with other comments that the Fish and Wildlife Service (Service) has about the CEP as it relates to wildlife. I have had a number of discussions with Sandy Stohler about the possibility of the Service contributing Partners for Wildlife funds toward the project. As I said at the meeting, the Partners for Wildlife program is quite competitive, and I am looking for ways to improve the Scottsdale Marsh project so that it is more competitive when it comes time to rank the proposals at the end of the year. If the City and ESA are able to improve the plan for wildlife by addressing some or all of the concerns put forth below, it will improve the chances of the project being selected for funding under the Partners program. I am concentrating my attention on Ponds A, B, C, and to a lesser extent, Pond D. To put forward the best possible project, I have chosen to exclude all areas south of Rowland Boulevard from the Partners for Wildlife funding proposal.

1) Our primary concern about the project is the high level of human and pet disturbance in the marsh. Human disturbance is not a big concern, and I think the City has addressed that issue well by including fencing at all human access points. Dogs running loose would be a problem. Construction of barrier fences will help alleviate that. We recommend that the City declare the area north of Rowland Boulevard a "leash required" zone. That would ease our concern. The remaining issue is that of cats. The concept of a linear water barrier between the marsh and the residential area is a good one, and combined with the fences should deter most cats from entering the marsh. However, the water barrier as proposed in the CEP will not be adequate to keep cats out of a large portion of the marsh. A six to eight foot-wide, 4 foot-deep (to inhibit growth of emergent vegetation), steep-sided (1.5:1) channel excavated along the entire western perimeter of Ponds A, B, and C would be a much more effective barrier, and would do a better job of keeping cats out of the wetland as well as the riparian habitat on the western perimeter of the marsh where cats would do the most damage (to migratory songbirds). During the meeting it was pointed out that a continuous channel extending from the top of Pond A to the bottom of Pond C could alter the hydrology of the ponds. If that is true, we would not recommend the construction of such a channel. We also understand that there are several options for providing auxiliary water to the ponds to compensate for the loss of hydrology resulting from the channel. We urge the City to vigorously pursue those options. A continuous barrier along the western

boundary of the marsh would result in the Partners for Wildlife proposal ranking significantly higher than a project containing the barrier as proposed in the Draft CEP.

If the City is unable to find a way to create an adequate water barrier, we recommend they initiate an aggressive public information and cat-trapping campaign, perhaps together with the local SPCA or office of animal control. As you know, this is a very sensitive issue with local homeowners, but is a problem that needs to be confronted head-on for the sake of the wildlife inhabiting the marsh.

2) Another area in which we would make a recommendation is in regard to the portion of the CEP that calls for the elimination of exotic plants and the enhancement of upland and riparian habitats. We recommend strongly for the use of native California grasses for these components. Though it can take several years for native grasses to become fully established after planting, an established, self-sustaining system of native grasses and forbs will do a good job of keeping exotics and other weeds from reinvading the project area, as well as complimenting the native shrub and tree plantings. Without the planting of, and management for, native grasses, the control of weeds will be an ongoing battle that the City could never win. I have enclosed a "Products and Services Directory" produced by the California Native Grass Association. Many of the companies and organizations listed in that directory could answer your questions about the use of native grasses, and could make recommendations for native grass species to consider planting. I would make a particular recommendation for the planting of *Muhlenbergia rigens* (California deergrass) if in the opinion of your seed provider the climate and site conditions are conducive to the establishment of that grass. It is an absolutely beautiful grass, very much resembling pampas grass though smaller in stature. The established native grass stands will occasionally require some management efforts to stay healthy. You might want to mention that in the Management and Monitoring section.

3) Also regarding the Management and Monitoring section, we recommend that water flowing into Ponds A, B, and C be routinely tested for contaminants. While we understand that there has been some testing in the past and that no problem chemicals were found, motor oil, antifreeze, pesticides, nutrients, and other such substances are likely to be entering the marsh in runoff from city streets. Water quality monitoring would alert the city to any potential problems of contaminants entering the marsh. It's an issue we are very concerned about in terms of the proposed Partners for Wildlife project.

4) The Landscaping and Revegetation portion of the CEP mentions the planting of poplars on the north end of pond D. We recommend the use of cottonwoods instead. Although poplars are fast growing, and in the eyes of many are more visually attractive than native cottonwoods, the wildlife value of poplars is extremely limited.

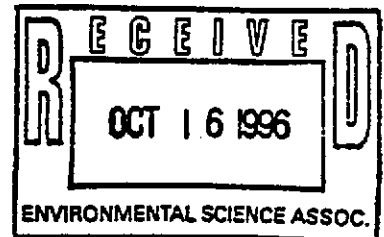
5) Also in the Landscaping and Revegetation portion is a discussion about planting shrubs on the habitat islands. We recommend against the planting of shrubs, and recommend the islands either be kept unvegetated or planted with native grasses. From our experience building habitat islands throughout California, we have found that waterfowl prefer to loaf and nest on islands where they can have a 360° unobstructed view, probably so that they can keep an eye out for predators and competing nesting birds.

We hope to learn the details of the final Marsh Enhancement Plan by mid-December so that I can rewrite and resubmit the Partners for Wildlife proposal that the City submitted last year. We will inform the City in early January 1997 if it is successful in receiving Partners for Wildlife funding, and if so at what level. I feel confident in predicting that the Service will put some money toward the project. The amount depends on how the project competes with other proposals that we receive. If you have any questions, don't hesitate to call me at (916) 979-2085.

Sincerely,



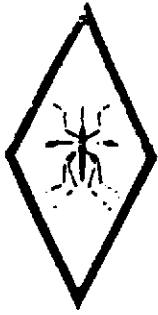
Daniel Strait  
Partners for Wildlife



Enclosure

✓cc: Lisa Wayne, Environmental Science Associates, 301 Brannan Street, Suite 200,  
San Francisco, 94107





# MARIN / SONOMA MOSQUITO AND VECTOR CONTROL DISTRICT

*First Organized District in California*

556 No. McDOWELL BLVD., PETALUMA, CALIFORNIA 94954  
TELEPHONE (707) 762-2236 FACSIMILE (707) 762-0606

SEP 16 1996

September 12, 1996

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Leo Adamsky  
CIP -City of Novato  
901 Sherman Ave.  
Novato, CA 94945

re: Scottsdale Marsh Enhancement et. al.  
Nos. 95-009 and 93-011

Dear Mr. Adamsky:

As I explained to Lisa over the phone, these areas, with the exception of Scottsdale Pond, are historic mosquito breeding sources. Production starts in December - January and continues throughout the summer. The winter species is Aedes squaniger, a severe pest and possible vector that flies 20 + miles if allowed to emerge as adults. That species is followed by a moderate pest Culiseta inornata and then Culex tarsalis, the encephalitis vector. The latter species continues breeding throughout the summer, requiring repeated control treatments by our Certified Vector Control Technicians. As a point of reference I want to let you know that the most recent positive finding of Western Equine Encephalomyelitis in the District was in our sentinel birds at Deer Island in Novato in 1994.

Only time will tell if the changes planned will minimize mosquito problems in these areas. In any case, we will need continued access to carry out routine surveillance and control. To the degree we can utilize fish and minimize our presence in these areas, we will do our best. If we must carry out chemical control, the District only uses compounds that are classified as "biologicals" not pesticides. They are specific for mosquitoes at our use rate and pose no threat to other non-target vertebrates or invertebrates.

With regard to assisting in maintaining open waterways, ponds, ect. we will be glad to contract with the city to accomplish the work. Minimizing the cat-tails and maintaining open water where wind, circulation and fish can do their work will provide the least attractive habitat for mosquito breeding.

Sincerely,

Charles H. Dill

cc Tom Gordon

10 Meadowbrook Ct.  
Novato, CA 94947

September 10, 1996

Mr. Leo Adamski  
Project Engineer  
City of Novato  
900 Sherman Ave.  
Novato, CA 94945

Dear Mr. Adamski:

Thank you for sending me a draft of the Scottsdale Marsh Conceptual Enhancement Plan. I was quite impressed with the amount of thought and labor that have gone into it.

I have several comments regarding the plan. I believe more trash cans should be included in the various areas around the marshes. Public trash cans are invariably too few in number, are not emptied frequently enough, and are usually overflowing. x

As a public safety measure, the three foot planter strip between the sidewalk and the curb, on Redwood Blvd. between Peter Court and Rowland should be removed and this portion of Redwood should be restriped to put back the class II bike lane which was removed when the right turn lane was installed several years ago. The north side of Rowland between Redwood and Donna Court extension should be made a no parking zone, as the current combined bicycle lane/parking strip does not meet minimum Caltrans standards and is unsafe. Its current use, as a de facto used car lot is rather inconsistent with the idea of marsh and wetlands. These two changes to the plan will encourage people to ride their bicycles or walk to the marsh area, to enjoy it, as opposed to adding more cars to an area already heavy with auto traffic.

Sincerely,



Mark Birnbaum

Recreation area - keep it simple - benches only

Is fencing really necessary? -

- a) detracts from naturalness of area
- b) Scottsdale pond - fence only where existing fencing is now
- c) allow hiking on some beams - like at ponds at McDinnis Park & wetlands east of freeway in Corte Madera.

Especially a trail around Scottsdale Pond. If one isn't made, people will do it anyway & perhaps not in the best areas.

Irrigated marsh median - on page 36

- a) doesn't seem to be practical or necessary. why not just low shrubs & groundcover

Upland Planting

- a) poison oak? WHY?
- b) blackberries - would encourage people to enter area to pick them

⑤ Peter Ct to Adelle St - a pathway  
now exists - this actually could  
continue to provide ped/bicycle  
access to Redwood via a berm.  
It appears that this area is dry  
most of the year.

⑥ Model boats -

I notice on existing Scottsdale Pond  
signs that model boats are permitted  
in a certain area of the pond.  
This does not seem like an appropriate  
use of a wild life pond!

⑦ Feeding of wild fowl should be discouraged.

⑧ Encouraging dog owners to clean up dog  
waste is a great idea. The ponds  
beyond McKinis Park have a good  
idea to handle this problem.

⑨ Island in Scottsdale pond - great idea

## APPENDIX C

## Planting Matrix

Latin Name	Common Name	Installation	Size	Height	Spread	Pit size	Notes
<i>Achillea millefolium</i>	yarrow	container	1 gal.	10"	3'	1' x 2'	
<i>Acer negundo</i> var. <i>californicum</i>	Box elder	b/b	4" cal.	50'	35'	6' x 6'	July-Sept.
<i>Aesculus californica</i>	buckeye	container	15 gal	18"	18'	6' x 6'	Sept.-Oct.
<i>Alnus rhombifolia</i>	alder	b/b	4" cal.	50'	35'	6' x 6'	July-Sept.
<i>Aster chilensis</i>	aster	container	1 gal.	10"	3'	1' x 2'	Nov.-Dec.
<i>Aster subulatus</i> var. <i>ligulatus</i>	aster	container	1 gal.	10"	3'	1' x 2'	Nov.-Dec.
<i>Baccharis douglasii</i>	marsh baccharis	container	1 gal.	2-5'	5'	1' x 2'	male only in median
<i>Baccharis pilularis</i>	coyote brush	container	1 gal.	2-5'	5'	1' x 2'	male only in median
<i>Carex athrostachya</i>	sedge	rhizome	3"	2'	2'	6" x 6"	male only
<i>Eleocharis macrostachya</i>	spikerush	rhizome	3"	2'	2'	6" x 6"	
<i>Equisetum</i> sp.	horsetail	container	1 gal.	2-3'	var.	1' x 2'	
<i>Euthamia occidentalis</i>	Western goldenrod	container	1 gal.	10"	3'	1' x 2'	Dec.
<i>Festuca</i> sp.	Enduro fescue mix	seed	-	-	-	-	
<i>Fraxinus latifolia</i>	Oregon ash	b/b	4" cal.	50'	35'	6' x 6'	July-Aug.
<i>Grindelia stricta</i> var. <i>angustifolia</i>	gum plant	container	1 gal.	2-3'	3'	1' x 2'	Nov.-Dec.
<i>Heliotropium curassavicum</i>	heliotrope	container	1 gal.	10"	3'	1' x 2'	Nov.-Dec.
<i>Heteromeles arbutifolia</i>	toyon	container	1 gal.	12'	12'	1' x 2'	Sept.-Oct.
<i>Iris douglasiana</i>	Douglas iris	container	1 gal.	1-2'	2'	1' x 2'	
<i>Iva axillaris</i> ssp. <i>robustior</i>	poverty weed	container	1 gal.	10"	3'	1' x 2'	Nov.
<i>Juglans californica</i> ssp. <i>hindsii</i>	California walnut	rhizome	3"	30'	30'	6" x 6"	July-Sept.
<i>Juncus effusus</i>	rush	rhizome	3"	2'	2'	6" x 6"	
<i>Leymus triticoides</i>	leymus	rhizome	3"	2'	2'	6" x 6"	
<i>Lupinus arboreus</i>	yellow bush lupine	container	1 gal.	3'	3'	1' x 2'	Aug.-Sept.
<i>Lupinus bicolor</i>	miniature lupine	seed	-	<1'	3'	-	Aug.-Sept.
<i>Nassella pulchra</i>	purple needle grass	bare root	-				density = 3 / sq. ft.
<i>Populus fremontii</i>	Fremont cottonwood	container	15 gal.	60'	60'	3' x 5'	male only in median
<i>Physocarpus capitatus</i>	ninebark	container	1 gal.	2-5'	5'	1' x 2'	Sept.-Oct.
<i>Quercus lobata</i>	valley oak	b/b	4" cal.	50'	50'	6' x 6'	July-Sept.
<i>Rhamnus californica</i>	coffeeberry	container	1 gal	8'	8'	1' x 2'	Sept.-Oct.
<i>Rosa californica</i>	California rose	container	1 gal.	2-5'	5'	1' x 2'	Oct.-Nov.

### Planting Matrix (cont.)

Latin Name	Common Name	Installation	Size	Height	Spread	Pit size	Notes
<i>Rubus ursinus</i>	California blackberry	stem cutting	10"	5'	5'	1' x 2'	
<i>Salix laevigata</i>	red willow	pole cutting	60"	15'	15'	3' x 8'	
<i>Salix lasiolepis</i>	arroyo willow	pole cutting	60"	15'	15'	3' x 8'	
<i>Salix lutea</i>	yellow willow	pole cutting	60"	15'	15'	3' x 8'	
<i>Sambucus mexicana</i>	elderberry	container	1 gal.	6-25'	10'	1' x 2'	
<i>Scirpus americanus</i>	common three-square	rhizome	3"	1-6'	2'	6" x 6"	
<i>Typha latifolia</i>	cattail	rhizome	3"	2-6'	2'	6" x 6"	

Legend: gal. = gallon; cal = trunk caliper at 18 inches from root crown; b/b = balled and burlapped; var. = variable

Note: Names follow Hickman 1993.

Sources: Cooper 1926, Heritage 1984, Schmidt 1980, Sunset Books 1995, Munz, 1968.

Months indicated in the notes column are approximate seed collection times for native plants that could be propagated from seed (although many are available from native plant nurseries). Note: Appropriate seed collection times can vary from year to year with annual climatic variation. A qualified botanist/horticulturist should be consulted at the time of seed collection to ensure maximum viability of collected seed.

## Planting Groups for the Scottsdale Marsh Enhancement and Gateway Planting

Vegetation Type	Location	Species
<b><i>Marsh Enhancement</i></b>		
Riparian Planting	R-1	alder, valley oak, red willow, arroyo willow, walnut, cottonwood, buckeye, box elder, Oregon ash, California rose, nine bark, marsh baccharis
	R-2	red willow, arroyo willow, yellow willow
	R-3	valley oak (higher elevations), red willow, yellow willow, arroyo willow (lower elevations)
	R-4	cottonwood (large screen planting to block views of freeway)
Seasonal Wetland Planting		gumplant, leymus, spikerush, marsh baccharis, aster, Western goldenrod, poverty weed, heliotrope
Upland Planting	U-5	blackberry, coyote brush (barrier planting adjacent to sensitive areas)
	U-6	coyote brush, toyon, coffeeberry (barrier planting adjacent to overlooks and trails)
	U-7	coyote brush, willow, yellow bush lupine
Turf		Enduro fescue mix (which includes monarch dwarf tall fescue, guardian dwarf tall fescue, twilight dwarf tall fescue, Vegas dwarf tall fescue and excalibur dwarf tall fescue)
<b><i>Median Planting</i></b>		
Trees	T-1	alder, cottonwood (Donna Street)
	T-2	valley oak, cottonwood, buckeye (Redwood Blvd.)
Shrubs		coyote brush, coffeeberry, elderberry, California blackberry, toyon, Douglas iris, yarrow, miniature lupine, yellow bush lupine
Irrigated Marsh		sedge, rush, leymus, horsetail, purple needle grass

Note: See the Planting Matrix for species names



## **Propagation Specifications**

### **Container Stock Installation**

- Excavate a planting hole twice as large as the rootball. On a slope the hole will be placed toward the front third of the terrace.
- Partially backfill the planting sole with loose soil (native soil if appropriate).
- Spread fertilizer and amendments as specified in the soils report.
- Carefully upend the plant container, leaving the rootball intact.
- Insert the rootball into the planting hole. Firm the soil around the plant and add more backfill if necessary to bring soil to or slightly above the root crown at finished grade.
- Construct a 4 inch high hand-compacted earth berm along the forward edge of the planting terrace to catch and hold water
- Irrigate immediately after installation to settle soil. If the roots become exposed, place additional soil around the root crown.

### **Pole Cutting Installation**

- Willow pole cuttings will be obtained from on-site sources during the winter when plants are dormant (December 15th through February 1st)
- Take cuttings with sharp pruning shears or a saw, paying close attention to not injure the bark. Cut the top end square and the bottom end slanted.
- Pole cuttings will be 60 inches long and between 5/8 and 1 1/2 inches in diameter at the bottom. Trim off the side branches, paying close attention to not damage buds.
- Between taking pole cuttings and installation, cuttings will be kept moist by covering them with moist fabric. If possible, install the cutting on the same day as the cut.
- Planting holes will be augured to 8 inches in diameter and to a minimum depth of 48 inches.
- Place pole cutting approximately 48 inches into the planting hole with slanted end pointing down (buds pointing up). A minimum of 3 buds should be present above ground.
- Backfill and compact the planting hole with soil (native soil if appropriate). Add amendments if necessary.
- Construct a 4 inch high hand-compacted earth berm, 30 inches in diameter to catch and hold water. Apply mulch within water basin.
- Irrigate immediately after installation to settle soil. Adjust soil level as necessary to final grade.

## **Propagation Specifications (cont.)**

### **Rhizome Installation (Emergent Vegetation)**

- Gather rhizometous plants from on-site. A minimum 3 inch long piece of rhizome plus culms will be collected.
- Culms will be clipped to 20 inches.
- Excavate planting hole sufficient to receive rhizome - 12 inches. Place the plant in the hole such that no more than 8 inches of plant material is above ground.
- Between collection and installation, keep the rhizomes and above ground plant material moist and protected from sunlight and wind. Install plants on the same day as collected.
- Excavate a hole 6 inches deep for planting.
- Insert the plant in the hole. Backfill with existing soil. Add no amendments.
- Firm the soil around the plant and add more backfill if necessary to bring soil to or slightly above the root crown at finished grade.

### **Broadcast Seed Installation**

- Scarify seed bed to a depth of 3 inches
- Install seed in October or November
- Broadcast seed on the tilled soil and gently rake the top 3/8 inches of soil.
- If necessary for erosion, cover the seed bed by broadcasting weed-free straw or equivalent.

### **All**

- All planting will be performed between November and January (except seeding).
- All seed and plant material will be from local sources (i. e., from marshes around San Pablo or Suisun Bays). If local nurseries are used, obtain a guarantee that seed and plant material is from local sources. If nurseries can not provide local material, collect and propagate (or hire a contractor to collect and propagate) the required quantities and species. Propagation from cuttings will take about two week, seed propagation will require longer.
- Record the number of individuals, location of source populations and date of planting.
- All plants that died or did not show reasonable growth in the first year will be replaced with the same species.

---

Adapted from Revegetation / Restoration Planning: The Basics. Society for Ecological Restoration, California Chapter

## APPENDIX D



## **SITE FURNISHINGS**

**Note:** Figures given are for unit price only, and do not include cost of installation.

### **BENCHES**

Quantity: five

Finish: Clear wood preserving sealer for all

Mounting: Conc. footing for permanent mount

Du Mor redwood bench with back per city standard, Model # 51-60R  
to include Model # F-1 embedment for each  
available through Ross Recreation (707) 526-4800  
Cost: \$ 683.00 each

### **BICYCLE RACKS**

Quantity: six

2 Bike Bollard Style

TimberForm Bollard CycLoops, by Columbia Cascade Company (510) 837-4440

Bollard Rack: 2172 -D-C evergreen color

Cost: \$ 110.00 each

### **DOG WASTE STATION**

Quantity: one

Metal post with instructions and bags for dog owner's supply.

Mutt Mitt Park Dispenser brand avail. from Intelligent Products (800) 697-6084

Location: Scottsdale Pond Recreation Area

Cost: \$ 110.00 each

### **FENCING**

Two types of fencing are used for barriers to the marsh.

6 'Tall Fencing shall be galvanized chain link with redwood lath.

Quantity: approximately 600 lineal feet

Cost: \$ 15.00 per lineal foot

4' Low Fencing shall be black vinyl coated chain link fence without lath.  
Quantity: approximately 6,550 lineal feet  
Cost: \$ 8.00 per lineal foot

#### **INTERPRETIVE SIGNAGE**

note: all prices given do not include labor, shipping, or design of signage image and text

Quantity: three

Memorial signage to include "Jakes Marsh" located at Pond A

Interpretive signage to include ecology of marsh located at Scottsdale Pond Lookout and at Peter Court Lookout.

Size: 24" x 36", two color, mounted

Pedestal: ACZA 4 pressure treated wood post, 12" minimum dimension

Footings: Extend post directly into concrete footing. Bury a minimum of twice the height. Post must extend below concrete footing into a gravel drain medium.

Frame: 2 x 4" Redwood Frame with weep holes at low side

#### **Option A: Wood**

Powerhouse Images, (415) 459-1121

Sign Panel: MDO wood with painted text

Cover Plate: Plexiglass cover plate, hold 3/4" away with stainless steel mounts.

Durability: Vandal resistant but can be scratched. Long lasting, U.V. resistant.

Cost: \$ 400.00 each

#### **Option B: Porcelain**

Fireform Porcelain Inc. (707) 523-0580

Sign Panel: Glass enamel fused to a steel sheet with an aluminum frame kit to be mounted on stand or wall.

Durability: Vandal resistant. Very long lasting.

Cover: no cover

Cost: \$ 450.00 each

#### **Option C: Fiberglass**

GS Images (301) 791-6920

Sign Panel: Fiberglass embedded graphic panel.

Cover: Plexiglass

Durability: vandal resistant, inexpensive to replace

Cost: \$ 1,000.00 each

#### **LIGHTING - PATHWAYS**

Available at North Bay Lighting (415) 453-6132, 607 Irwin Street, San Rafael, CA

Quantity: approximately 2100 lineal feet of path.

Option 1: Hadco RL8, round Lighthouse bollard, 4' tall at 32' o.c., 70 Watt HPS with tractor lens, (2.8 fc)

Quantity: approximately 65 fixtures

Cost: \$ 465.00 each

Option 2: Hadco RF8, 8" round Bollard light, 4' tall at 36' o.c., 70 Watt HPS with tractor lens, (2.0 fc)

Quantity: approximately 58 fixtures

Cost: \$ 374.00 each

Option 3: Woodform model # 3315, 4' Redwood Bollard Light with parabolic fixture, at 24' o.c. (1.42 fc)

Quantity: approximately 87 fixtures

Cost: \$ 555.00 each

#### **LIGHTING - STREET**

Quantity: Undetermined (several hundred feet at 125-175' o.c.)

Marbelite Concrete Poles with bracket arms, per city standard. Standard Cobra lamp.

HPS lamps, per city standard

Available at

Cost: \$ 5,000 each

#### **PICNIC TABLES**

Quantity: four

Finish: Clear wood preserving sealer for all

Mounting: Concrete footing with galvanized metal bracket attaching to wood above soil level for all

Option 1: Construction Heart Redwood Picnic Table, 8 foot length with chain for wet set anchor. Available at Sonoma County Probation Camp. (707) 527-1108.

Cost: \$ 300.00 each

Option 2: Select Heart Redwood Picnic Table, 6' length, model #795 available from GameTime (800) 235-2440

Cost: \$ 487.00 each

#### **POND AERATORS (Optional Cost Item)**

Based on acre feet of pond, there may need to be up to two horsepower per acre, which would require up to twenty horsepower total. Option A calls for (3) aerators which will provide nine horsepower, with the provision that the water quality must be monitored by maintenance staff to understand the exact number of aerators required.



Option A: Otterbine Subtriton, 2 horsepower, Available at Automatic Rain, San Rafael,  
\$ 5,207.00 each including pump chamber and 100 ' of power cable for each;

Quantity: minimum of three

Cost: \$ 15, 600.00

Option B: Aquatic Eco Systems, horizontal turbo aspirator, 2 horsepower, available  
from Water Components, (415) 331-1939, approx. \$ 1,100.00. each including cable,  
frame and concrete

Quantity: five

Cost: \$5,500.00

#### **RESTROOM ENCLOSURE (Optional Cost Item)**

Quantity: one

Type: Litchfield gazebo "Resorter" model. 12' shingled octagon

Location: Scottsdale Pond Recreation area

Cost: \$ 5,102.00 each

#### **SHADE ARBOR**

Quantity: three

Litchfield Redwood 10' x 10' Mini Shelter with steel hardware to be primed and  
coated with flat black finish. May be incorporated with benches or signage if desired.

Cost: \$ 1,557.00 each

#### **TRAFFIC BOLLARDS**

Quantity: six

Metal, 3" post with 12" Chain, 63" long with welded cap pre-fabricated by City  
Maintenance Department

Mounting: 3-1/2" pipe x 15" deep in ground sleeve with bottom welded square plate  
and drain. Pad lock bollards to sleeves with universal emergency key per fire  
department specifications. (lock not included in price).

Finish: (1) coat primer, (1) coat paint; Novato Green, with (3) strips reflective tape at top  
of bollard.

Location: (3) at maintenance road and (3) at public entrance to Scottsdale Pond  
Recreation Area.

Cost: \$ 80.00 each

#### **TRASH RECEPTACLES**

Quantity: eight

Finish: frame of black coated steel with kiln-dried wood surrounding slats and stainless  
steel hamper top, clear wood preserving sealer for all

Mounting: Concrete footing with galvanized metal bracket attaching to wood above  
soil level for all

Type: Timberform Arbor Series 36 gallon Litter Container

Location: (3) in Scottsdale Pond Recreation area, (2) at Pond at roadside, (2) at Peter Court Overlook, (1) at bench at Pond E  
Cost: \$ 640.00 each

#### **VENDORS:**

North Bay Lighting (415) 453-6132, 607 Irwin Street, San Rafael, CA 94901

Automatic Rain, (415) 454-4313, 63 Larkspur, San Rafael, CA

Fireform Porcelain Inc. (707) 523-0580

GS Images (301) 791-6920

Hannan specialties (916) 488-7026

Intelligent Products 10,000 Lower River Road, P.O Box 626, Burlington, Kentucky

41005 (606) 689-7200 or

Litchfield Industries, Inc. (800) 542-5282

Marin Fence Co. (415) 457-1771

Powerhouse Images, (415) 459-1121

Sonoma County Probation Camp. (707) 527-1108, 6201 Eastside Road,  
Forrestville CA, 95436

Timberform Arbor Series by Columbia Cascade (510) 837-4440

Water Components (415) 331-1939, 30 Liberty Ship Way, Sausalito, Ca 94965